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VOL. XXXV. 1 FEBRUARY, 1931. PART 2.

Event and Comment.

Fat Lamb Raising.

MORE attention is being given to fat lamb raising in Queensland, and there is no reason why this branch of the pastoral industry should not be greatly extended in those districts where climate, pastures, and other conditions are favourable. The present position of wool growing suggests that farmers on comparatively small holdings should consider more closely the commercial possibilities of the carcass as against the fleece. The success of lamb raising in Queensland in suitable environment and with sound flock management has already been proved, and with the opening of the new metropolitan abattoirs the risk of an over-supplied market will be considerably reduced.

Generally speaking, however, our natural pastures are not altogether suitable for fattening lambs, but that these pastures can be greatly improved has been demonstrated conclusively in many places. On land more or less within the coastal country and that carried formerly a heavy growth of jungle, introduced grasses have been found quite suitable for lamb fattening. It is advisable to supplement ordinary grazing with cultivated crops the production of which may be regulated to supply any anticipated deficiency in feeding values, for seasonal influences, as with other branches of husbandry, are a very important factor.

Sheep on Small Holdings.

FAT lamb raising should be combined with mixed farming, and anyone so engaged may expect from sheep a remunerative return. Assuming that an established farmer has his cultivation paddocks enclosed with ordinary stock-proof fences, he would be able to make them sheep-proof with wire netting at a cost of something like £30 a mile. Paddocks of 20 acres or less are suitable. Sheep may be turned in immediately after harvest. They will do all the gleaning and clearing required, obviate the necessity in some cases of burning off before re-ploughing, and leave

the land in better condition for subsequent cropping. Cultivation is one of the best means of converting a worm-infested paddock into worm-free country, and worms are one of the worst plagues to the sheep man in the coastal or near-coastal areas, and even further inland, especially in years of heavy summer rains.

When the weight and probable price of the farmer's wool are taken into account, a fair margin of profit should be revealed. Should the lambs be sold when five months old at anything like current market rates, a flock return of something around 10s. a head could be expected.

Farmers' Flocks.

THE Corriedale is a very suitable farmers' sheep, being big, well-proportioned, possessing a strong constitution, with a plentiful milk secretion, combined with a capacity for producing a weighty fleece of about 54s to 56s spinning counts. It is an admirable dual-purpose animal, an essential in the farmer's breeding flock. Discussing this subject, Mr. Carew (Instructor in Sheep and Wool) says that as the Corriedale is not suitable for producing fat lambs it is necessary to mate the ewes to a breed of ram likely to give the best results, and, despite the claims made on behalf of other breeds, rams of the Dorset Horn or Border Leicester breeds are recommended for the higher and well-drained areas within, say, 50 to 150 miles from our sea-board.

If the Corriedale breed is not procurable, or if for any other reason the sheep farmer wishes to raise his own breeding flock, full consideration must be given to geographical, climatic, and general conditions. The Corriedale is based on being fifty-fifty Lincoln and Merino. Therefore, Lincoln rams mated with Merino ewes will give a suitable type, but would probably be composed of a big percentage of rough-covered ewes that would greatly reduce the value of the clip. The Corriedale, which has been developed by careful selection, is composed of a more even type. Should the Lincoln-Merino first cross be used as the breeding flock, the purebred Lincoln ram will not produce lambs to mature as quickly as the Border Leicester or Dorset Horn; therefore, by introducing two breeds of rams, complications are being constituted unnecessarily. Should the holding be within 50 miles of the coast, with low-lying as well as elevated ridges, either the Romney Marsh or Romney cross as the breeding flock is recommended. On the higher and better drained areas the Border Leicester crossed with the Merino can be recommended as likely to give the best results all round. The first cross will be quick to mature. The wether lambs should be fit for market when four and a-half to five months old. The first cross ewe lambs should be retained as breeders, being very suitable both as wool and mutton sheep, growing to a good size, possessing plenty of vigour, capable of a quick recovery after a pinch, having a good milk secretion (which is so important in securing early maturing lambs), and being prolific; all these characteristics, combined with the quality of adapting themselves to the varied diet usually supplied on a mixed farm, help to secure for them a position amongst farmers' sheep that is difficult to displace. These half-bred ewes can be mated again with the pure Border Leicester ram, but, as the result of this mating, it is recommended that all this drop be sold as fat lambs as soon as fit, as the ewes from this cross are on the coarse side in regard to wool production.

It will, therefore, be understood that only one pure breed of ewe and one pure breed of ram is necessary—that is, the Merino and Border Leicester. This will simplify matters considerably, as all the breeding ewes may be run in one flock during the whole year.

The Dorset Horn is a very desirable breed for the fat-lamb trade, but as they are not so valuable as wool producers and do not possess any distinct advantage over the Border Leicester as a fat-lamb getter there appears to be no reason why they should be used instead of the Border Leicester and Merino cross.

Assuming then that this is the cross to be used, we find that the Merino is suitable to be mated either in spring or autumn, but the Border Leicester-Merino cross will only mate successfully in autumn. For the purpose of getting fat lambs

it is better to keep the rams away from the ewes except at mating time. Seeing that the autumn is the only season in which a good mating can be expected, rams should be put with the ewes from the second week in February to the last week in March. The lambing will thus commence in the middle of July and finish the last week in August.

Care of the Lambing Ewe.

AT the time of mating, the ewes should be kept on good and suitable natural pasture. If the season be good, they will probably be attacked by the sheep maggot fly, but at this season the ewes can stand the knocking about that is necessary for crutching, jetting, &c., to keep them free. If stomach worms are present they are worst at this season. Against that, however, is the fact that at this season the sheep should be better able to withstand the evil effects, due to the feed being more suitable and nutritious.

When winter comes the sheep should be practically free from worms, and the ewes can go right through the lambing without disturbance, as flies also are, as a rule, absent at this period. By the time the flies begin to get busy the lamb marking should be over, as the most suitable time to mark lambs is when they are from two to six weeks old. The flock will be fit for shearing by the end of September or early October. The shearing has a retarding effect on the attack of the fly, especially if all sheep are jetted as they go through the race after shearing.

The sheep at shearing time should be examined for broken mouth and specially marked to be fattened off. The broken-mouthed ewes may be fattened off with the lambs and sold while they are still capable of improving condition. When the lambing is timed to take place in July and August provision should be made for a supply of feed for the whole batch, as the more quickly they are fattened the more economic the fattening.

If lucerne is grown on the holding it will show little growth during July and August. If cut in June, the short growth during July and August is very suitable for grazing sheep, on which they will do well, thus giving the lambs a good start. Up to the time the lamb is dropped the ewes should be kept going, but should not be put on luscious feed. After the lambs are dropped, the best and most luscious is not too good, and for grazing purposes lucerne is among the best.

There are other crops, however, that are suitable and that may be grown during our normal autumns and winters, such as oats, barley, wheat, turnips, rape, &c. The last mentioned gives the best results for fattening purposes. If sown in April and May it will be suitable for feeding during August, September, and October. For feeding during November and December, lucerne is about the best: failing this, Sudan grass or one of the panicums will fill the bill and top off all the lambs by the end of January or the middle of February.

Increase in Dairy Production.

IT is particularly gratifying to note not only the large increase in production of dairy products in this State which has taken place, but the vast improvement which has been effected in the quality of our produce, said the Minister for Agriculture and Stock (Hon. H. F. Walker) in a recent interview.

Dairy farming is an important factor in the progress of the State. Favourable seasonal conditions add materially to our wealth, and the outlook for the current season gives promise of a record in production of dairy products. In the modernisation of dairy factory buildings and equipment much activity has been maintained during recent years, and it is heartening to note the optimism of our primary producers as is evidenced in the building of new and the modernising of existing factories. That this activity has been justified is apparent from the large increase in the quantity of choice grade butter being submitted to the State grading officers throughout the present season. The total gradings from July last show an increase in the percentage of choice butter of over 100 per cent.

Notwithstanding the reduction of values on the London market the contribution of the dairy farmers in balancing our overseas trade will prove of substantial value.

Bureau of Sugar Experiment Stations.

HISTORY OF THE QUEENSLAND SUGAR INDUSTRY.

It is with much regret that the Director of Sugar Experiment Stations, Mr. H. T. Easterby, finds that, through illness, he is unable for the present to continue the "History of the Queensland Sugar Industry," but hopes, however, to be able to resume this at an early date.

CANE PESTS AND DISEASES.

Mr. Buzacott, Assistant to the Entomologist at Meringa, has forwarded the following report on insect pests affecting cane in the Burdekin district to the Director, Mr. H. T. Easterby:—

The Lower Burdekin district was visited during November and a collection of the insects occurring in the district during the month was made, and further data relative to pest control collected.

At the date of the visit insufficient rain had fallen to enable the greyback beetle to escape from the ground, so it was impossible to determine the size of the beetle flight or estimate the probable damage next year.

Giant Termite.

The damage caused by this pest was very much in evidence in young plant cane on several farms. Where extensive poisoning of trees and fences has been carried out for a number of years, however, the damage has been considerably diminished. In order to help growers as much as possible to combat this pest it has been decided to recommend to the Lower Burdekin Pest Destruction Board to purchase a number of drums of carbon bisulphide to be distributed among growers troubled by this pest. The method of using it is to treat all badly infested fence posts or trees near the affected cane by boring a hole with an auger through the wood and well into the matrix of the nest. Into this hole is poured half a pint to 1 quart of carbon bisulphide according to the size of the nest, and the hole is then plugged up again. It is also a good plan to follow this treatment by pouring a little commercial creosote in the same hole to prevent infestation of the stump at a later date. After having freely poisoned stumps and trees round the headland, if patches in the cane are still affected, it is usually fairly easy to trace out the source of infestation of these patches by following the course of the infested area to the headland and looking for a nest in any of the posts or trees near by. If this method be carried out it is possible to practically eradicate the troublesome termite from the cane.

Among the insects bred and collected during the fortnight spent in the district were several specimens of scoliid wasps and some species of robber-flies, all of which are factors in the control of scarabæid grubs. The total collection provided a fairly comprehensive group of the insects flying in Ayr during November.

USE OF LIME BY CANEGROWERS.

With the very encouraging results which have been obtained in North Queensland during the past year or two, following the application of lime on acid soils, we are constantly receiving inquiries from interested growers for advice as to whether their land would benefit from the use of this material.

For the guidance of growers interested in this subject, we would offer the following advice. Before purchasing lime for your land, take a soil sample of your block and forward it to us for a test of its lime requirement. The sample taken should be representative of the soil on the block, and therefore a portion of the surface soil to plough depth should be taken at several points in the field, and the whole thoroughly mixed. A sample of this mixed soil of about 1 pound weight should be placed in a suitable container, labelled with the name of the grower. A note from the latter despatched at the same time as the sample should state that advice on the lime requirement of the soil is desired.

Growers in the Northern areas should forward their samples to the Chemist in Charge, Sugar Experiment Station, South Johnstone. Farmers in those districts south from Townsville should address samples and correspondence to the Director, Bureau of Sugar Experiment Stations, Department of Agriculture, Brisbane.

BARLEY AS PIG FOOD.

Climatic conditions throughout the cereal-producing districts during the past season were distinctly favourable, but although the original estimate of Australia's total grain production has not been realised, the harvest was a record one. Owing, however, to the parlous state of the grain export trade, increased production has given rise to what may be termed a "grain glut," and the stockowner has an opportunity of taking advantage of the low prices ruling for cereals for fattening purposes where economically possible.

A SURPLUS OF BARLEY.

QUEENSLAND has recently produced a substantial surplus of barley, for which, unfortunately, there exists but a very limited export outlet. The local market for this grain for malting purposes is also restricted, and the financial depression is responsible for decreased human consumption of malt products.

An Excellent Stock Food.

It is as a stock food, therefore, that immediate attention is being drawn to the value of barley, and in this connection the possibility of extending the frozen pork trade to markets ordinarily largely supplied with barley-fed pigs, is emphasised, for barley is an excellent grain for raising and fattening pigs. Barley-fed pork, bacon and ham, are of the highest quality, fine-grained, and streaky and, like dairy-fed pork, command top price in the best markets of the world.

In Queensland it often happens that maize and its products are actually lower-priced and therefore usually considered better food. Wheat is also often used more extensively, but neither of these facts detract from the high-feeding value of barley, especially at present low prices and where it is fed in combination with more bulky farm-grown foods. The late maize crop in Queensland is not likely to be a heavy one, and this grain is already higher-priced than barley or barley meal.

Barley Meal.

Unless otherwise arranged, the barley to be made available for stock food will be in the form of barley meal, for it is inadvisable to feed this grain in the whole dry form. The meal may be fed dry in a separate trough, or may be soaked in hot or cold water or cooked, and be fed with milk and other farm-grown foods available. The proportion of barley meal to use will vary in accordance with the other available foods, suitable grain rations being—

(1) Barley meal alone.
(2) Barley meal, 5 parts; wheat meal or pollard, 4 parts.
(3) Barley meal, 3 parts; maize meal, 3 parts; pollard or wheat meal, 3 parts.

A proportion of grain mixture to be fed in conjunction with skim milk or other dairy products and/or green lucerne, lucerne hay, or chaff (soaked), potatoes, pumpkins, and green stuff. Use more milk and green foods with very young pigs and more grain as the pigs approach the fattening stage, for young pigs require more protein (flesh formers) than carbohydrates and fats (fat formers). If no skim milk, lucerne, or other protein foods are available on the farm, from 5 to 10 per cent. of meat or protein meal could, with advantage, be added to the grain ration.

Barley meal carries approximately 10 to 12 per cent. crude protein, 4 to 6 per cent. crude ash and fibre, 1 to 2 per cent. crude fat, 65 to 66 per cent. carbohydrates, and about 14 per cent. moisture. Maize invariably carries a higher fat content (about 4 per cent.) and is therefore used more freely by pig farmers (often too freely) in the fattening stages, with the result that many corn-fed bacon pigs reach the factories in an overfat condition. To check this tendency the combination of barley and other grains, and meat or protein meal, is again suggested.

One advantage in the feeding of barley meal over pollard is that the whole of the grain is fed when barley is used, whereas in the milling of wheaten flour, the bran and pollard are regarded as by-products, of less value, commercially than flour.

Further particulars as to the use of barley meal for other classes of stock, and price per cwt., or ton, may be obtained on application to the Department of Agriculture and Stock, Brisbane, or to the produce merchants handling this line.

CLIMATOLOGICAL TABLE—DECEMBER, 1930.

SUPPLIED BY THE COMMONWEALTH OF AUSTRALIA METEOROLOGICAL BUREAU, BRISBANE.

Districts and Stations.	Atmospheric Pressure. Mean at 9 a.m.	Shade Temperature.						Rainfall.	
		Means.		Extremes.				Total.	Wet Days.
		Max.	Min.	Max.	Date.	Min.	Date.		
Coastal.	In.	Deg.	Deg.	Deg.		Deg.		Points.	
Cooktown	29·89	88	75	95	20	70	26	509	11
Herberton	..	81	63	89	17, 20, 29, 30	59	3, 16, 26, 31	800	11
Rockhampton	29·95	89	69	98	31	64	28, 30	244	12
Brisbane	29·99	85	65	92	18	58	29	194	7
Darling Downs.									
Dalby	29·96	88	61	97	31	49	29	158	5
Stanthorpe	..	81	54	94	23	43	27, 29	208	9
Toowoomba	..	81	57	92	31	49	28, 29	202	6
Mid-interior.									
Georgetown	29·86	96	70	101	31	58	30, 31	289	8
Longreach	29·86	98	72	107	21	59	28	24	3
Mitchell	29·92	90	64	99	21, 22, 23, 31	48	29	82	4
Western.									
Burketown	29·85	92	75	101	31	64	28	574	7
Boulia	29·83	100	73	111	22	64	28, 29	126	5
Thargomindah	29·88	90	70	103	13, 14, 22	59	28	229	8

RAINFALL IN THE AGRICULTURAL DISTRICTS.

TABLE SHOWING THE AVERAGE RAINFALL FOR THE MONTH OF DECEMBER, IN THE AGRICULTURAL DISTRICTS, TOGETHER WITH TOTAL RAINFALL DURING DECEMBER, 1930 AND 1929, FOR COMPARISON.

Divisions and Stations.	Average Rainfall.		Total Rainfall.		Divisions and Stations.	Average Rainfall.		Total Rainfall.	
	Dec.	No. of Years' Records.	Dec. 1930.	Dec. 1929.		Dec.	No. of Years' Records.	Dec. 1930.	Dec. 1929.
North Coast.	In.		In.	In.	*South Coast*—continued:	In.		In.	In.
Atherton	7·57	29	4·50	3·43	Nambour	6·90	34	3·05	8·05
Cairns	8·63	48	8·59	5·99	Nanango	3·87	48	1·55	4·03
Cardwell	8·16	58	5·03	1·66	Rockhampton ..	4·75	43	2·44	2·40
Cooktown	6·77	54	5·09	1·64	Woodford	5·72	43	1·49	6·69
Herberton	5·71	43	8·00	5·09					
Ingham	6·84	38	5·29	1·13					
Innisfail	11·61	49	8·16	0·76					
Mossman	11·13	17	8·63	5·42					
Townsville	5·52	59	0·89	2·19	*Darling Downs.*				
					Dalby	3·24	60	1·51	4·50
					Emu Vale	3·55	34	1·23	2·05
Central Coast.					Jimbour	3·26	42	2·07	4·66
					Miles	3·02	45	2·08	5·89
Ayr	3·92	43	1·73	1·53	Stanthorpe ..	3·54	57	2·08	3·36
Bowen	4·44	59	2·14	2·99	Toowoomba ..	4·35	58	2·02	3·32
Charters Towers ..	3·52	48	0·35	2·12	Warwick	3·43	65	1·38	2·74
Mackay	7·32	59	2·37	3·30					
Proserpine	8·11	27	3·69	1·05	*Maranoa.*				
St. Lawrence	4·72	59	2·59	1·04					
					Roma	2·49	56	0·40	2·39
South Coast.									
Biggenden	4·64	31	1·56	1·92	*State Farms, &c.*				
Bundaberg	4·99	47	2·25	6·24					
Brisbane	4·86	79	1·94	1·90	Bungeworgoral ..	3·00	16	1·10	1·74
Caboolture	5·22	43	2·91	4·23	Gatton College ..	3·60	31	1·42	2·39
Childers	5·66	35	1·82	1·84	Gindie	3·00	31	0·34	2·36
Crohamhurst ..	7·17	37	2·19	8·91	Hermitage	3·02	24	1·36	2·22
Esk	4·69	43	3·06	4·18	Kairi	6·36	16	..	1·39
Gayndah	4·13	59	3·18	2·04	Mackay Sugar Experiment Station ..	8·73	33	3·21	2·73
Gympie ..	6·05	60	2·45	3·13	Warren	3·70	15	..	1·75
Kilkivan ..	4·57	51	1·56	3·27					
Maryborough ..	4·73	58	1·86	2·45					

GEORGE. G BOND, Divisional Meteorologist.

IN MEMORIAM.

HON. W. T. PAGET.

The death at his home at Mooloolah on 23rd December of Mr. Walter Trueman Paget removed one who, in his day, played a very prominent part in the public life of Queensland, and in the development of the sugar industry. Mr. Paget was born in London in 1854, and came to Queensland in January, 1873. Soon after his arrival in this State, then a colony, he went to Mackay, and became one of the pioneers of the sugar industry. Farming at that time was not easy by any means, but Mr. Paget found time to give attention to the requirements of his district. He became chairman of the Pioneer Divisional Board, a member of the Mackay Harbour Board, vice-president of the Mackay Hospital, and president of the Mackay Sugar Board.

In May, 1901, after the death of the late Mr. J. V. Chataway, Mr. Paget was elected member for the district as a supporter of the Government of the late Sir James R. Dickson. He signed the roll of Parliament on 16th July, 1901, and remained member for Mackay until his retirement from politics in April, 1915. From October, 1908, until February, 1911, he held the joint portfolios of Minister for Railways and Agriculture, and from February, 1911, until April, 1915, he was Minister for Railways. In his seven years at the Railway Department Mr. Paget commenced more railway lines and opened more new railways than, perhaps, any other man in the history of Queensland.

In Parliament (for many years he was Chief Whip of the Philp Government Party) he had the rare gift of immeasurable patience. He gave up his time and his energies to his Parliamentary duties, and night after night, in sessions before there was a time limit on speeches, Mr. Paget would listen for hours to the speeches, frequently being the only occupant of the Opposition benches. He sought no place for himself. When he was asked to accept the portfolio of Agriculture and Railways he was induced to take the office by his two old friends, the late Sir Robert Philp and Mr. Digby F. Denham, who always remained one of his closest friends. But his long apprenticeship served him in good stead. He emerged from the comparative obscurity of a private member to the front rank of the political battle, equipped with long experience, with full knowledge of the procedure of Parliament and of the Departments, and familiar with every departmental chief. He had a particular gift of humour that was often regarded by his opponents and by those who did not know him well as cynicism. But the cynicism was a masquerade because those who knew him well knew that he was extremely sensitive, that he was endowed with a spacious tolerance, and had a very anxious solicitude for the people of his district and of the State. In spite, however, of his fourteen years in Parliament he was not primarily a politician.

He Loved the Land.

He loved the land with a passionate intensity, and having secured a large area at Mooloolah on the North Coast, he used to depart every Friday night for that place and spend the week-end clearing and preparing his holding for his future home, thoroughly enjoying himself. Later, when he left Parliament, immensely relieved at being able to throw off the responsibilities of public life, he devoted himself to the development of his property. About three years ago Mr. Paget suffered very greatly from almost complete loss of eyesight, but he endured the affliction with amazing

courage. He loved his home and his family, seldom visited the city, and when he came to town he probably returned the same day after what he used to call "an enjoyable pitch" with Mr. Denham and a few other old friends. Mr. Paget is survived by his widow, two daughters (Mrs. C. B. Paul, of Mooloolah, and Miss Paget, of Townsville), and two sons (Walter and A. H. Paget), of the Stanthorpe district.

The funeral, which moved from his home to the Mooloolah-Glenview Cemetery, was well attended. Hon. Harry F. Walker (Minister for Agriculture and Stock) represented the Government, and the Railway Department was also represented.

Tributes.

The Hon. Digby Denham, a former Premier of Queensland and also Minister for Railways, expressed extreme regret at the passing of Mr. Walter Paget. Mr. Paget, he said, had been ailing for a long time, and he had just received private advice that he had died of a stroke. Mr. Denham added: "I have been associated with the late Mr. Walter Paget in political life for many years, sometimes as Whip of the party, and other times as Minister, and I can say that whatever duty he was attached to, he performed it most faithfully and thoroughly. I had the highest regard for him, having worked with him as a colleague, and never had occasion to regret the confidence I reposed in him. He was a fine friend."

Mr. E. B. Swayne, M.L.A., who was associated with Mr. Paget for some years as a joint representative for Mackay, when it was a double-member electorate, and afterwards as the member for the adjoining electorate of Mirani, said in the course of a personal tribute: "I had every opportunity for noting his energy and self-sacrificing spirit in the performance of his public duties. But more particularly in the North should his memory be valued in connection with that great national work, the North Coast Railway to Cairns. When Mr. Kidston, in 1910, floated his loan for railway building, the linking up of our Western termini being principally in his mind, Mr. Paget, as his Minister for Railways, put in his claim for the North. It was acceded to, and, soon after, work commenced, and was continued as speedily as circumstances permitted, by the linking of small railways already in existence on the route, and construction north from Rockhampton. But there were occasions when work such as expensive key bridges had to be tackled, and I think I am right when I say that Mr. Paget's determination on such occasions saved the North years of delay in the completion of our railway."

Mr. L. L. Larke, of Mooloolah, added the following tribute as a friend and neighbour: "The late Mr. Paget had a remarkable personality, and a gift of endearing himself to all who were so fortunate as to come into close contact with him. With a brilliant mind, and a clarity of view possessed by few, the deceased gentleman did noble service to the State of Queensland, both in public life, and in the great sugar industry of North Queensland. It is many years since he retired from the position of Minister for Railways, but he was affectionately remembered and honoured by the employees of the Department. That recollection was a testimony to the esteem in which he was held by the service of which he had been political head for many years. The sugar industry, too, has much to thank him for; in fact, it would be difficult to estimate what he did for that industry in its pioneering years. The large and representative gathering at the last sad rites was a fitting tribute to his memory and worth, while expressing the deep sympathy felt by all for the widow and children."

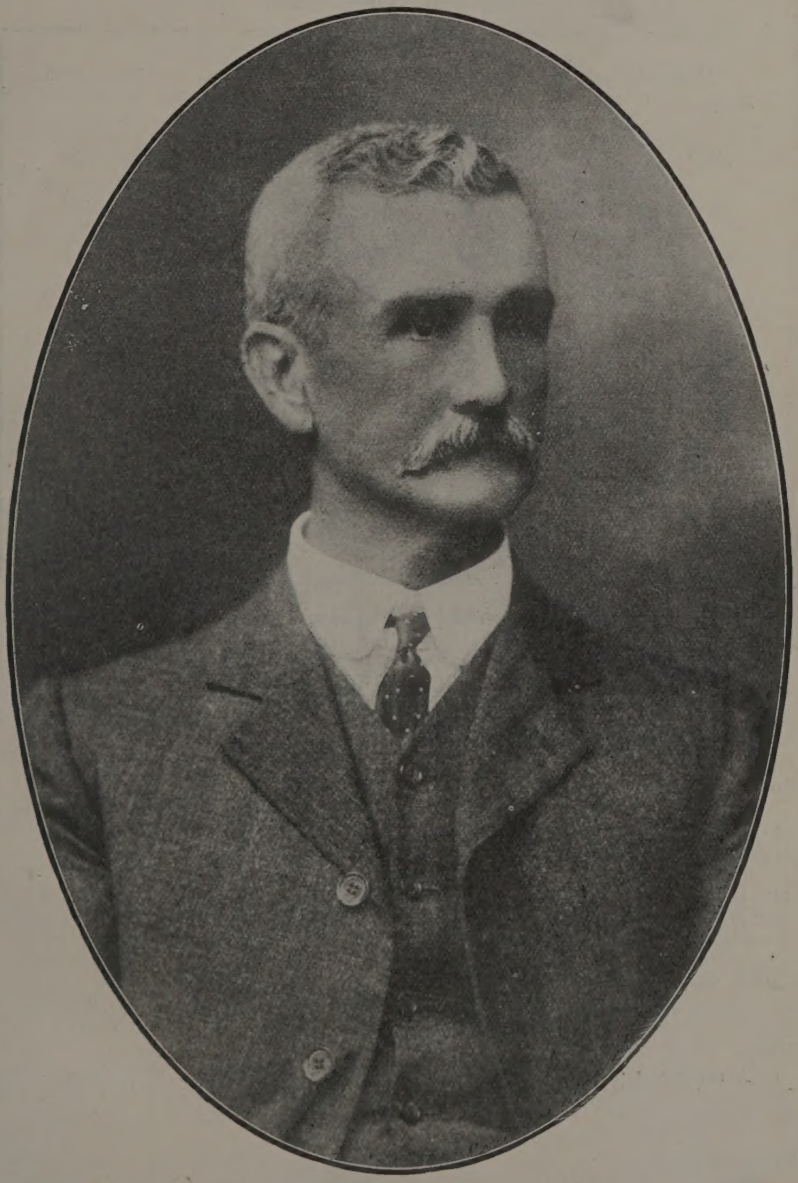


Plate 34.—The Late Walter Trueman Paget.
Minister for Agriculture and Stock, Queensland, October 29, 1908, to February, 1911.

FIELD WHEAT CROP COMPETITION, 1930.

By H. C. QUODLING, Director of Agriculture; and C. S. CLYDESDALE, Instructor in Agriculture.

Following are the awards in the Field Wheat Crop Competition, 1930 Season:—

TOOWOOMBA DISTRICT.

First.—Mrs. K. McGlynn, Pampas. "Clarendon" wheat, estimated to yield 46 bushels per acre. Points awarded, 127.5.

Second.—Mr. Chas. Town, Kaimkillenbun. "Novo" wheat, estimated to yield 42 bushels per acre. Points awarded, 117.5.

Third.—J. and J. Lemon, Cambooya. "Duke of York" wheat, estimated to yield 34 bushels per acre. Points awarded, 116.0.

WARWICK DISTRICT.

First.—Mr. R. S. Young, Freestone. "Three Seas" wheat, estimated to yield 45 bushels per acre. Points awarded, 123.5.

Second.—Mr. Edward Kyle, Ellangowan. "Pusa" wheat, estimated to yield 44 bushels per acre. Points awarded, 119.0.

Third.—Mr. F. Armstrong, Pilton. "Pusa" wheat, estimated to yield 42 bushels per acre. Points awarded, 116.5.

Champion .. .. .. Mrs. K. McGlynn, Pampas.

Reserve Champion .. .. Mr. R. S. Young, Freestone.

ARRANGEMENTS for the holding of the competition were not completed before August last, when representatives of the Department of Agriculture and Stock and of the four Agricultural Societies concerned met in conference at the Royal National Association's Council Rooms, Brisbane. The societies represented were: The Royal National Association, Brisbane; the Royal Agricultural Society, Toowoomba; the Eastern Downs Horticultural and Agricultural Association, Warwick; and the Maranoa Pastoral and Agricultural Association, Roma.

Entries.

Severe frosts on 16th and 17th August in the Roma district damaged a number of promising crops. Insufficient entries were forthcoming. This led to the withdrawal of the Maranoa Pastoral and Agricultural Association from the competition.

The entries in the Toowoomba and Warwick districts constituted a record, 133—fifty-two in the former, and eighty-one in the latter. There were, however, thirty-four withdrawals, seventeen from each district. The withdrawals were due in the main to rust and frost, and in a few instances to heavy wind storms, and one to hail.

Choice of Varieties.

The more popular varieties in the Warwick competition were Pusa, Clarendon, Duke of York, and Florence, with sixteen, thirteen, nine, and seven crops respectively.

A somewhat similar position was met with in the Toowoomba contest. Here, however, there were seven crops each of Pusa and Florence, six of Clarendon, and five of Duke of York.

Prolificacy.

The three highest yielding crops were: Clarendon, 46; Three Seas, 45; and Pusa, 44 bushels respectively. It is a remarkable fact none of these crops were fertilised.

Average Yields.

The average yield in the Warwick District Competition was 34 bushels per acre (sixty-four entries), and in the Toowoomba district 32.8 bushels (thirty-five entries).

Individual Variety Yields.

Taking the four popular varieties, the yields were as follows:—

Clarendon	36.8 bushels per acre.
Pusa	35.6 bushels per acre.
Florence	35.2 bushels per acre.
Duke of York	29.0 bushels per acre.

Conditions of the Competition.

Conditions of the competition were practically the same in each district, the entrants being called upon to furnish information under the following headings:—

Character of soil on which crop was to be grown.

Variety and amount of seed sown per acre.

Date of sowing and whether seed was sown before or after rain.

Rainfall.

The number of wheat crops that had been grown on the same land continuously in immediately preceding years.

Kind of crop grown previous to the competition crop. Rotation followed.

Treatment of land by cultivation.

Kind and quantity of fertiliser used.

Treatment of seed for bunt and smut.

Basis of Judging and Allotment of Points.

The area of the competing crop was to be 15 acres, which, however, might be any part of a larger area. Points were allotted for—

1. Apparent yield.—One point for each bushel up to 24 bushels; half point for every additional bushel.
2. Trueness to type and purity .. .. 20 points.
3. Freedom from disease .. .. 30 points.
4. Evenness of crop .. .. 20 points.
5. Condition .. .. 10 points.
6. Cleanliness .. .. 20 points.

Rainfall.

Difficulty was experienced in obtaining accurate and comparable records from the respective competitors, consequently official records of ten representative centres on the Darling Downs were secured from the Officer in Charge of the Commonwealth Meteorological Bureau in Brisbane (Mr. Bond), who courteously supplied the following tables:—

RAINFALL FOR 1930.

Station.	Rainfall for 1930.	Average over long period.	Difference for comparison.	Jan. to April, 4 months.	May to Oct. Growing period of wheat — six months.	Nov. to Dec., 2 months.
Dalby ..	26·14	25·75	+ 0·39	9·69	12·06	4·39
Milmerran ..	22·31	24·86	— 2·55	4·48	14·22	3·61
Pittsworth ..	23·52	28·13	— 4·61	8·65	11·94	2·93
Oakey ..	24·30	23·99	+ 0·31	8·88	11·08	4·34
Toowoomba ..	40·82	36·48	+ 4·34	11·08	22·48	3·33
Clifton ..	28·99	23·86	+ 5·13	11·04	15·62	2·33
Allora ..	28·18	26·95	+ 1·23	8·87	16·29	3·03
Warwick ..	22·33	27·67	— 5·34	5 93	14·11	2·28
Yangan ..	21·94	23·99	— 2·05	5·93	13·05	2·96
Killarney ..	26 82	28·83	— 2·01	7·23	17·52	2·07

MONTHLY RAINFALL FOR 1930, WITH NUMBER OF WET DAYS.

Station	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total for Year.	Average for Long Period.	No. of Years.
Dalby	386	123	262	198	221	236	302	250	92	105	281	158	26·14	25·75	60
Number Wet Days ..	14	8	5	7	7	10	7	5	6	8	5	5	87	..	..
Milmerran	74	62	81	231	264	197	321	231	96	313	263	98	22·31	24·86	30
Number Wet Days ..	3	3	4	5	4	7	6	5	4	7	2	4	54	..	..
Pittsworth	255	111	197	302	207	291	303	170	92	131	121	172	23·52	28·13	43
Number Wet Days ..	7	4	8	6	6	9	7	7	4	9	3	4	74	..	..
Oakey	234	199	150	305	199	276	274	101	134	124	202	232	24·30	23·99	31
Number Wet Days ..	10	4	4	6	5	8	7	5	4	9	4	6	72	..	..
Toowoomba	619	426	168	258	550	831	255	173	147	292	131	202	40·82	36·48	58
Number Wet Days ..	18	10	12	7	13	17	8	6	5	9	4	6	115	..	..
Clifton	265	220	262	357	262	568	313	114	149	156	131	102	28·99	23·86	33
Number Wet Days ..	7	6	7	8	7	10	6	6	4	7	4	3	75	..	..
Allora	315	262	144	165	240	465	301	130	128	365	152	151	28·18	26·95	47
Number Wet Days ..	9	7	6	6	6	12	7	7	5	9	5	5	84	..	..
Warwick	203	205	125	61	286	323	299	113	133	257	90	138	22·33	27·67	65
Number Wet Days ..	7	6	6	6	7	10	6	5	4	8	4	5	74	..	..
Yangan	203	122	160	108	261	417	142	122	112	251	187	109	21·94	23·99	18
Number Wet Days ..	6	6	7	8	6	9	5	5	4	7	3	3	69	..	..
Killarney	203	155	112	253	346	501	239	94	110	462	64	143	26·82	28·83	40
Number Wet Days ..	14	8	12	10	13	22	7	5	4	10	4	5	114	..	..

Plate 35.—Mrs. K. McGlynn, of Pampas, had a fine field of "Clarendon" Wheat. First prize Toowoomba District Competition and winner of Grand Championship. Mr. Jack McGlynn and daughter Joan in the foreground.

"Oh, I am the grass that has conquered man,
I am the King that is Bread!
Your armies and fleets are but fragile things
That await a nod of my head."

Plate 36.—Mr. R. S. Young, of Upper Freestone, gained First Prize in the Warwick District Competition and Second in Grand Championship for this field of "Three Seas."

"I am a song that the need of man has sung
From the soil at his feet."

PLATE 37.—MESSRS. J. AND J. LEMON'S, FINE CROP OF "DUKE OF YORK" AT CAMBOOYA.

Third prize Toowoomba District Competition.

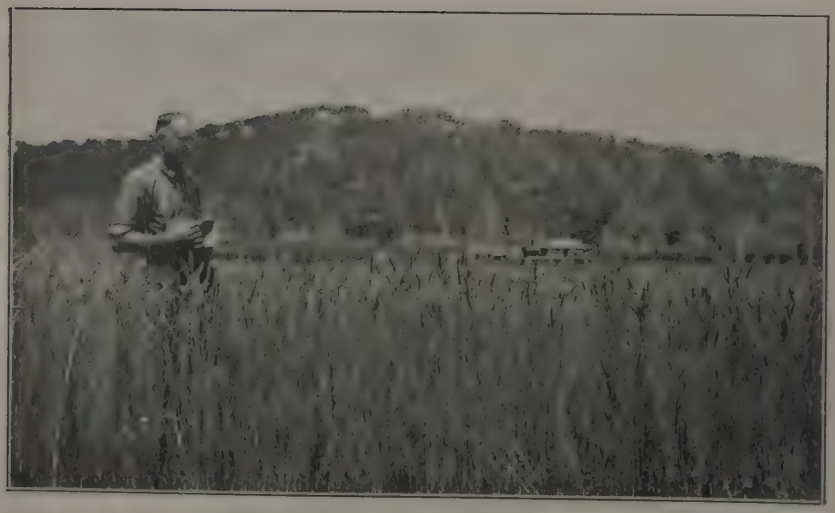


PLATE 38.—MR. F. A. ARMSTRONG, PILTON, AND HIS PADDOCK OF "PUSA."

Third prize Warwick District Competition.

"Leave the hustle all behind you; come an' let contentment find you
In a cosy little cabin lyin' snug among the wheat."

Plate 39.—Mr. W. J. Lloyd's paddock of "Pusa" at Harrow.

"Food-giver, keeper and saviour of life
I am the grain that is wheat."

Plate 40.—Mr. Colin McCallum's field of "Florence" on Kincora, Pittsworth.

". . . A pleasure in a measure for a man who likes the game."

Plate 41.—Messrs. R. M. and J. H. Anderson's Crop of "Clarendon" at Southbrook.

"Wheat, wheat, wheat! Oh, the sound of it is sweet!
I've been praisin' it an' raisin' it in rain an' wind an' heat
Since the time I learned to toddle, till it's beatin' in my noddle
Is the little song I'm singin' you of wheat, wheat, wheat."

Plate 42.—A Crop of "Florence" on Mr H. E. Luck's Farm at Cambooya.

"Over the face of your rolling hills, over your plains afar,
I have strung you a necklace of gold to wear . . ."

Plate 43.—Mr. J. J. Hartnett had a fine stand of "Florence" at Freestone.

"For growin' things . . . . It makes life sort o' sweet
An' your conscience never swats you if your game is growin' wheat."

Plate 44.—This Crop of "Duke of York" on Mr. F. T. Keable's Farm at Tannymorel was also among the commended.

PLATE 45.—MESSRS. CAREY BROS.' FINE STAND OF "CLARENDON" AT CANNING DOWNS WELL.

". . From God's earth His gift of wheat."

PLATE 46.—"CLARENDON" WHEAT ON MR. C. GUSTAFSON'S FARM AT TANNYMOREL.

"Sowin' things an' growin' things, an' watchin' of 'em grow."

Plate 47.

Mr. W. P. Canning, of Yangan, was another successful grower of "Pusa."

". . . . . a-keepin' of my feet,
While I cater for the nation with my wheat, wheat, wheat."

Plate 48.—"Clarendon" Wheat on Mr. R. S. Young's Farm at Upper Freestone.

"Wheat, wheat, wheat! Oh, the people have to eat!
An' you're servin', an' deservin' of a velvet-cushion seat
In the cocky-farmers' heaven when you come to throw a seven;
An' your password at the portal will be wheat, wheat, wheat."

PLATE 49.
A CROP OF "CLARENDON" ON MR. R. C. HOLTHOUSE'S PROPERTY AT WESTBROOK.
"Realisin' he was wealthy in what makes a life worth while."

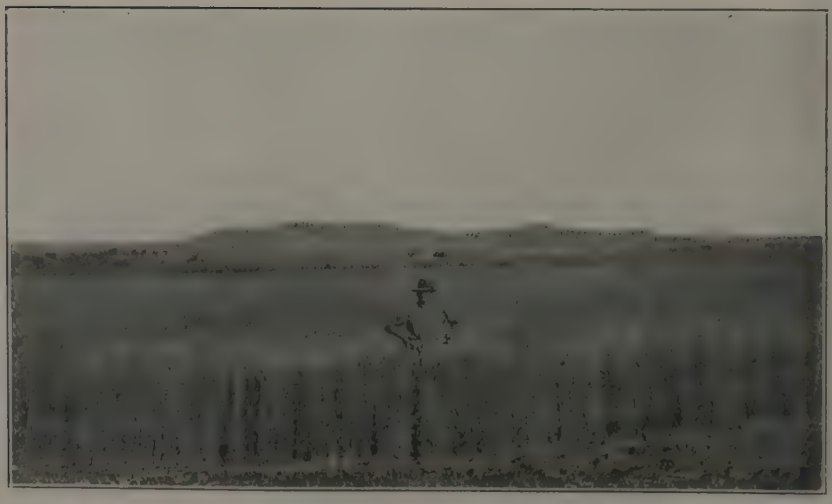


PLATE 50.—ANOTHER FINE CROP WAS THAT OF MR. W. H. TAYLOR, OF WESTBROOK, WHO SPECIALISED IN "PUSA."
"Of the world's great work he has done his share who has garnered a crop of wheat."

Plate 51.—Mr. M. Stower, of Linthorpe, Pittsworth, discusses his Crop of "Florence" with Mr. Chas. Clydesdale, Instructor in Agriculture.

". . . . . with a feelin' like content,
An' I feel like thankin' Heaven for a day in labour spent."

Plate 52.—Mrs. K. McGlynn had also a fine stand of "Pusa" on Pampas. Mr. Jack McGlynn and daughter Joan are in the picture.

Plate 53.—Horse-drawn, Engine-functioned Reaper-thresher at Work on Mr. J McMahon's Crop of "Florence" Wheat, Swan Creek.

"Then I come up bright an' grinnin' with the knowledge that I'm winnin',
With the rhythm of my harvester an' wheat, wheat, wheat."

"Life is sweet where grows the wheat."

Plate 54.—A Sunny Queenslander Happy on the Home Farm.
(Miss Hazel Doreen Redgwell, Junabee, *via* Warwick.)

FIELD WHEAT COMPETITION.

PARTICULARS OF THE TWELVE LEADING CROPS.

Following are the details of the leading crops:—

All seed wheat was "pickled" with approved fungicide before sowing.

Competitor.	Variety.	No. of Points.	Apparent Yield (Bushels).	Rate Sown per Acre. (lb.)	Sown.		Ploughed.	Cultivated with Springtooth S.T., Sundercut S.C., Stiffshank S.S.	Harrowed.	District.	Remarks.
					Date.	Before or after Rain.					
Mrs. K. McGlynn ..	Clarendon ..	127·5	46·0	60	20-23 May	After ..	..	S.S. twice ..	Once, also rolled	Toowoomba	Fed off (sheep)
R. S. Young ..	Three Seas ..	123·5	45·0	60	May ..	After ..	January and April	S.C. once ..	Twice ..	Warwick ..	..
Ed. Kyle	Pusa ..	119·0	44·0	45	9 June ..	After ..	Once	S.C. once ..	Twice ..	Warwick ..	Fed off (sheep)
Chas. Town	Novo.. ..	117·5	42·0	44	25 May ..	After ..	..	S.C. five times	Once ..	Toowoomba	..
F. Armstrong ..	Pusa ..	116·5	42·0	50	June ..	After ..	January	S.C. thrice ..	Thrice ..	Warwick ..	..
J. and J. Lemon ..	Duke of York	116·0	34·0	60	2 May ..	After ..	..	S.C. once ..	Thrice ..	Toowoomba	Fed off (sheep)
F. T. Keable ..	Duke of York	115·5	34·0	75	May ..	After ..	January, also skim ploughed twice	S.C. four times	..	Warwick ..	..
Mrs. E. Sullivan ..	Clarendon ..	115·0	39·0	46	3 May ..	After ..	..	S.C. once S.T. twice	Once ..	Toowoomba	Fed off (sheep)
W. J. Lloyd ..	Pusa ..	114·5	38·0	52	9-12 June..	After ..	..	S.C. twice ..	Twice ..	Toowoomba	..
R. C. Holthouse ..	Clarendon ..	114·5	40·0	50	Mid June ..	After ..	..	S.C. once S.T. once	Twice ..	Toowoomba	..
W. H. Groves ..	Florence ..	114·0	36·0	60	End of May	After ..	February	S.C. twice ..	Thrice ..	Warwick ..	..
N. McCoist	Pusa ..	114·0	42·0	60	End of May	After ..	November and February	..	Thrice ..	Warwick ..	..

Rate of Seeding.

The average rate of seeding was 54 lb. per acre for both the Toowoomba and the Warwick districts. Sowing with the "combine" drill was fairly general.

Feeding Off.

Twenty-five per cent. of the growers fed their crops off with sheep.

Number of Years Land Sown to Wheat.

The major number of fields entered in the competition had been cropped for a period ranging from one up to six years. In one instance the land had been cropped with wheat for thirty years, and the yield was 40 bushels per acre. *This crop was not fertilised.*

Fertiliser Used.

Eleven growers in the Warwick district applied super, the average quantity being 50 lb. per acre.

The average apparent yield of the competition crops in this locality was 34 bushels per acre. Similarly, for the eleven fertilised crops, 34§ bushels.

GENERAL OBSERVATIONS.

The Season.—The rainfall was fairly evenly distributed over the six months' growing period of the crop—May to October—but, unfortunately, the winter was so mild that there was not sufficient seasonal frost or cold weather to keep rank growth in check. Apparently, all available sheep were used to try and keep some of the crops back, but operations were more or less hampered by the soft and sticky condition of the soil, induced by rain. Very heavy stocking was consequently resorted to on the black soil country. Even then a number of forward crops, in which the embryo ear had formed low down in the stem, had to be fed right back, necessitating their coming again from the stool. Rust was virulent in the late maturing crops.

Frost.—As the wheat was coming into head and when out in flower a few severe frosts damaged a number of varieties; the latter may have been susceptible ordinarily, or happened to be growing on exposed country, or were not sufficiently resistant at the time owing to the plants being in a soft, succulent condition. Second growth was manifest in frosted crops, with the result that there was a proportion of immature grain in the harvested sample.

Varieties found to be more readily susceptible than others were Pusa, Florence, and Three Seas.

Several other varieties were found to be more or less affected in given localities, but in the generality of cases the wheat was in a susceptible condition at the time owing to having made forced growth.

Rust.—Into this favourable field came the rust. Its incidence and rapid development was the primary reason for the late withdrawal of a number of exceptionally promising crops from the competition. It also was responsible, particularly in susceptible and late maturing varieties, for a reduction in the number of points under the headings of disease, apparent yield, and for condition of crop.

Quick maturing, and therefore naturally rust escaping, varieties and those which were either moderately resistant or resistant to rust made the best showing throughout the competition.

A considerable increase took place in 1930 in the area cropped with wheat, which aggregated 325,000 acres, with an estimated yield of 4,750,000 bushels.

Although "rusty" years like the one under review are luckily few and generally far between, the probability is that the popularity of certain varieties will wane. Several found to be more or less affected by rust, both in and outside of the competition, were: Currawa, Cleveland, Nabawa, Waratah, Canberra, Duke of York, Watchman, Waterman, Warrior, Amby, and Roma Red.

Varieties slightly susceptible, but which generally gave a good account of themselves where conditions were reasonably favourable, are: Clarendon, Florence, Flora, Warren, Gluyas Early, Warchief, Cedric, Pusa, Novo, and Bunge.

Three Seas appeared to be a highly rust-resistant variety.

Bunt (Ball Smut).—With a few exceptions the seed wheat used in the competition crops was treated before sowing, either with bluestone, copper carbonate, or anti-bunt. General observation of the season's wheat crops, however, showed that many growers either omitted to take the necessary precaution to use uncontaminated seed or else failed to "pickle" it.

Flying Smut.—Unfortunately, this disease was found to be on the increase. Some varieties appear to be more susceptible than others, the commonly affected ones being: Currawa, Warren, Warchief, Canberra, Waratah, and Nabawa. Many growers with whom this question was discussed expressed the view that as flying smut did not show up in the harvested sample it was not so objectionable as bunt. It is patent,

however, that its presence accounts for a reduction in yield, and the disease, as stated, is on the increase.

As infection takes place the previous season, when the wheat is in the flowering stage and the mycelium of the fungus is retained inside the grain, ordinary fungicides and copper carbonate are of no value. The standardised hot water treatment, however, is effective both for "flying smut" and "bunt." Growers obviously have the means at hand of working up supplies of "clean" seed.

Other Wheat Diseases.

Flag Smut.—Flag smut, which threatened to do a good deal of harm in 1928, was evidently largely checked by the measures taken to control it. It was less in evidence in 1929, and in 1930 its presence was not noted in any crop.

As the disease is of an insidious nature, it may reappear in wheat crops under conditions favourable to its development.

"Foot Rot" or "Take All."—This disease was in evidence in a few of the competition crops, which lost points accordingly. Its incidence in Queensland wheat fields is comparatively recent. The disease is caused by a fungus which attacks the roots of the wheat plant. "Take all" usually appears in round patches in the crop, and if not checked will seriously reduce subsequent wheat yields, even up to 50 per cent.

Affected plants which happen to live until they reach the heading stage become sickly and bleach (whiteheads), and do not fill their grain.

Burning the stubble is advisable, but this does not account for the spores in the soil out of reach of the fire. Grain from affected crops should not be used for seed. Rotation crops must be grown, preferably maize or others not likely to form a host plant for the fungus, which also thrives on barley grass and one of the brome grasses, to which latter family Prairie grass belongs.

Pure Seed.

One of the inducements to enter for the competition was that grain from competing crops and from additional areas on the farm of the same variety was entitled to the Wheat Board's bonus of 2d. per bushel, provided it was true to type, free from disease and foreign grain and other seeds, and was in good, sound condition and fit for seed at the time of delivery.

Inspection was made during judging operations, and certificates were issued for approximately 30,000 bushels of wheat of different varieties. It is understood that all this grain is to be cleaned and graded and used for seed purposes.

It may be remarked in regard to the competing crops that some were very true to type; others were reasonably true from a commercial standpoint. The major number, however, left much to be desired on the score of purity.

The extra care and attention required in keeping the varieties grown on one farm quite distinct is fully realised, but where the production of pure seed is encouraged by a bonus this in itself should be a set off against the extra care required. There is much to be said in favour of growers selecting seed in the field and working up their own supplies, keeping them pure, and sowing only clean, graded seed.

The 1930 Wheat Crops.

Last season the increase in the area under wheat was most marked, indicating the possibilities of rapid expansion of the industry by the well-directed use, at any time, of modern machinery, providing economic conditions are favourable.

Observation of the wheat crops, and more particularly those on old cultivation paddocks, showed unmistakably that methods in vogue of continuously cropping with wheat require to be very carefully reviewed. Black oats are undoubtedly a serious menace. The presence of barley in wheat crops is another disability. Variegated thistles, wild turnips, and other aggressive weeds have made and will continue to make exceptional headway in cultivation paddocks unless promptly checked. Hexham Scent is very much on the increase. "Dockage" under these headings accounts for a considerable reduction in returns to individual growers.

Matters of this sort cannot very well be disregarded; actually they are vital to the wellbeing of the industry. A quick panacea for all the ills is not readily forthcoming. The individual grower is undoubtedly in the best position to cope with the major difficulties. Touching the question of black oats, barley, and weeds, shallow cultivation immediately after the removal of the wheat crop is advisable, as germination will be encouraged and the land is automatically brought into good shape to trap the rainfall, much of which latter would otherwise find its way into the nearest creek.

Suitable crop rotations, cleanly-kept cultivation, fallowing, and feeding-off with sheep all play their part in the control of weeds in the wheat fields. The latter are calling aloud for a cleanliness of cultivation which, particularly on old settled localities, is unfortunately all too frequently absent.

WHEAT CROP COMPETITION, 1930.

WARWICK DISTRICT.

Name and Address.	Variety.	Apparent Yield (Bushels).	Trueness to Type and Purity. (20 Points).	Freedom from Disease. (30 Points.)	Evenness of Crop. (20 Points.)	Condition. (10 Points).	Cleanliness. (20 Points.)	Total Points.
*R. S. Young, Freestone	Three Seas	45	18·0	28·0	18·5	8·5	16·0	123·5
†Ed. Kyle, Ellangowan	Pusa	44	16·0	26·5	17·0	8·0	17·5	119·0
‡F. Armstrong, Pilton	Pusa	42	15·5	26·0	16·5	8·0	17·5	116·5
F. T. Keable, Tannymorel	Duke of York	34	18·0	25·0	18·5	7·5	17·5	115·5
W. H. Groves, Freestone	Florence	36	15·0	26·0	17·5	8·0	17·5	114·0
N. McCoist, Wivarra	Pusa	42	10·0	26·0	18·0	9·0	18·0	114·0
P. J. McGahan, Mount Sturt	Duke of York	32	18·0	23·5	18·5	7·0	19·0	114·0
Verney and Parkinson, Hermitage	Duke of York	36	18·0	24·0	17·5	7·0	16·5	113·0
W. P. Canning, Yangan	Pusa	34	15·5	27·0	17·5	7·5	16·5	113·0
H. Eastwell, Wheatvale	Clarendon	42	14·0	27·0	16·0	7·5	15·5	113·0
W. McVeigh, Swan Creek	Florence	38	12·0	26·0	18·0	7·5	18·0	112·5
J. A. Buckley, Rosehill	Novo	37	15·5	25·0	17·5	7·0	16·5	112·0
Braithwaite Bros., Junabee	Clarendon	34	14·5	26·5	17·0	7·5	17·5	112·0
W. M. Wagland, Clifton	Florence	42	8·0	28·0	17·5	8·0	17·5	112·0
W. P. Cooper, Massie	Duke of York	27	19·0	24·0	18·0	7·0	18·0	111·5
P. O'Mara, Tannymorel	Clarendon	39	12·0	26·5	16·5	7·5	17·0	111·0
W. G. Skerman, Willowvale	Clarendon	37	15·5	25·0	16·5	7·0	16·5	111·0
W. J. Ryan, Allora	Flora	34	17·5	26·0	14·5	6·0	18·0	111·0
Carey Bros., Canning Downs	Clarendon	38	14·0	24·0	16·5	7·5	17·5	110·5
T. A. Brownlee, Junabee	Duke of York	31	17·0	23·5	18·5	7·0	17·0	110·5
Morgan Bros., Tannymorel	Pusa	39	15·0	24·0	17·0	7·5	15·0	110·0
R. S. Young, Freestone	Clarendon	38	16·0	26·0	14·0	7·0	16·0	110·0
D. Braithwaite, Tannymorel	Clarendon	40	16·0	18·0	17·0	8·5	17·5	109·0
J. W. Watt, Mill Hill	Florence	39	14·5	23·0	17·5	6·5	16·0	109·0
W. P. Canning, Yangan	Novo	32	14·5	26·0	17·0	6·0	17·0	108·5
R. Hamilton, Wildash	Waratah	36	14·5	23·0	17·5	6·0	17·5	108·5
J. J. Booth, Junabee	Clarendon	36	10·0	26·0	17·0	7·5	17·5	108·0
H. W. Vine, Junabee	Waratah	33	16·0	24·0	16·5	7·0	16·0	108·0
M. McMahon, Freestone	Florence	40	12·5	26·0	16·0	7·5	14·0	108·0
J. McMahon, Sladevale	Pusa	33	12·0	25·0	17·5	7·5	17·0	107·5
Verney and Parkinson, Hermitage	Pusa	38	12·0	25·0	16·0	7·0	16·0	107·0
R. and F. W. Moar, Pilton	Pusa	42	15·0	22·0	15·0	6·0	16·0	107·0

* First in District Competition and Second in Grand Championship. † Second in District Competition. ‡ Third in District Competition.

WHEAT CROP COMPETITION, 1930—*continued.*

WARWICK DISTRICT—*continued.*

Name and Address.	Variety.	Apparent Yield (Bushels).	Trueness to Type and Purity. (20 Points).	Freedom from Disease. (30 Points.)	Evenness of Crop. (20 Points.)	Condition. (10 Points).	Cleanliness. (20 Points.)	Total Points.
J. J. Hartnett, Freestone	Florence	28	15·5	23·0	17·0	7·0	17·5	106·0
F. R. Morrice, Hermitage	Duke of York	28	16·0	23·0	18·0	7·0	15·0	105·0
W. Evans, Pilton	Pusa	36	14·0	24·0	15·0	6·5	15·0	104·5
G. A. Gross, Sladevale	Pusa	33	10·0	24·0	17·5	7·5	16·0	103·5
Geo. Gross, Sladevale	Pusa	34	10·0	24·0	17·0	7·5	16·0	103·5
B. C. Madsen, Freestone	Florence	36	10·0	23·5	17·0	7·0	16·0	103·5
R. J. Brownlie, Junabee	Duke of York	30	16·5	22·0	15·5	6·0	16·0	103·0
A. J. Kemp, Junabee	Pusa	32	10·0	24·0	16·5	7·5	16·0	102·0
R. Hamilton, Wildash	Pusa	33	12·0	20·0	17·0	6·5	17·5	101·5
F. T. Keable, Tannymorel	Pusa	36	12·0	24·0	17·0	7·5	10·0	100·5
D. McDonnell, Massie	Gluyas	32	9·0	25·0	15·0	7·0	16·0	100·0
N. C. Neilsen, Sladevale	Clarendon	33	12·0	20·0	16·0	6·0	17·5	100·0
B. J. Box, Murray's Bridge	Pusa	39	14·0	18·0	15·0	6·5	14·5	99·5
S. L. Saal, Pilton	Cedric	36	16·0	20·0	13·0	5·0	15·5	99·5
Morgan Bros., Tannymorel	Waratah	36	12·0	20·0	16·5	6·0	14·5	99·0
A. Madsen, Loch Lomond	Pusa	27	10·0	23·0	16·0	7·0	17·5	99·0
J. R. McConville, Swan Creek	Florence	36	8·0	20·0	17·0	7·0	17·0	99·0
J. Woodford, Wheatvale	Clarendon	33	12·0	23·5	14·0	7·0	14·0	99·0
E. M. and N. E. Mills, Clifton	Warren	36	15·0	22·0	12·0	5·0	15·0	99·0
E. M. and N. E. Mills, Clifton	Pusa	36	8·0	23·0	16·0	7·0	14·0	98·0
D. Conway, Swan Creek	Clarendon	27	13·0	22·0	16·0	6·0	15·0	97·5
J. C. McIntosh, Jew's Retreat	Florence	28	10·0	27·0	12·0	8·0	14·0	97·0
C. Gustafson, Tannymorel	Clarendon	40	8·0	15·0	17·0	7·5	17·0	96·5
D. McDonnell, Massie	Florence	33	9·0	20·0	15·0	6·5	16·0	95·0
G. L. Wilson, Mount Sturt	Clarendon	30	9·0	22·0	17·0	5·0	15·0	95·0
W. Lysaght, Clinton Vale	Novo	24	12·0	18·0	17·5	6·0	17·5	95·0
J. J. O'Brien, Massie	Cleveland	21	17·5	15·0	18·0	5·0	17·0	93·5
E. Neilsen and W. H. Mogridge, Wiyarra	Waratah	28	12·0	19·0	15·5	6·0	14·5	93·0
H. Carey, Loch Lomond	Pusa	30	8·0	23·0	14·0	6·0	14·0	92·0
W. Erlandson, Allora	Nabawa	21	15·0	15·0	17·0	5·0	17·0	90·0
W. Lysaght, Clinton Vale	Flora	21	10·0	12·0	17·5	5·0	17·5	83·0
J. Woodford, Wheatvale	Cleveland	18	12·0	10·0	14·0	4·0	12·0	70·0

WHEAT CROP COMPETITION, 1930—*continued.*

TOOWOOMBA DISTRICT.

Name and Address.	Variety.	Apparent Yield (Bushels).	Trueness to Type and Purity. (20 Points).	Freedom from Disease. (30 Points.)	Evenness of Crop. (20 Points.)	Condition. (10 Points).	Cleanliness. (20 Points.)	Total Points.
*Mrs. K. McGlynn, Pampas	Clarendon	46	18·5	28·5	18·0	8·5	19·0	127·5
†C. Town, Kaimkillenbun	Novo	42	16·0	26·0	17·5	7·5	17·5	117·5
‡J. and J. Lemon, Cambooya	Duke of York	34	19·0	25·0	18·5	7·5	17·0	116·0
Mrs. E. Sullivan, Pittsworth	Clarendon	39	16·5	27·0	16·5	7·5	16·0	115·0
W. J. Lloyd, Harrow, Cambooya	Pusa	38	15·5	26·0	17·0	8·0	17·0	114·5
R. C. Holthouse, Westbrook	Clarendon	40	17·0	26·0	17·0	7·5	15·0	114·5
H. E. Luck, Cambooya	Florence	38	16·0	27·0	17·0	7·0	15·5	113·5
J. T. Luff, Kaimkillenbum	Florence	34	16·0	27·0	16·5	8·0	17·0	113·5
Mrs. K. McGlynn, Pampas	Pusa	40	14·0	25·0	17·0	7·0	17·5	112·5
F. W. Muggridge, Kaimkillenbun	Duke of York	30	18·0	26·0	17·0	7·0	17·0	112·0
A. L. Bridgeman, Southbrook	Clarendon	39	14·0	26·0	17·0	8·0	15·0	111·5
Colin McCallum, Pittsworth	Warchief	36	16·5	23·0	17·0	8·0	17·0	111·5
F. Bach, Oakey	Currawa	38	16·0	22·0	17·5	7·5	17·5	111·5
J. and J. Lemon, Cambooya	Florence	30	17·5	26·0	17·0	7·5	16·0	111·0
J. G. K. Bell, Oakey	Cedric	30	17·0	26·0	15·0	8·0	18·0	111·0
R. M. and J. H. Anderson, Southbrook	Clarendon	39	15·0	25·0	15·5	7·5	16·5	111·0
M. Stower, Linthorpe, *via* Pittsworth	Florence	36	14·5	25·0	16·5	7·5	17·0	110·5
H. C. M. Sharpe, Lavelle, *via* Milmerran	Pusa	32	16·5	24·0	17·0	7·0	17·0	109·5
H. S. Handley, Pampas	Cedric	36	16·0	24·0	16·0	7·0	16·5	109·5
H. S. Handley, Pampas	Florence	36	15·5	24·5	16·0	7·0	16·0	109·0
W. and G. Hogarth, Clifton	Florence	36	12·5	25·0	16·5	7·5	17·0	108·5
W. H. Taylor, Westbrook	Pusa	28	14·0	27·0	16·5	7·5	17·0	108·0
Ziesemer Bros., Bongeen	Gluyas	28	16·0	24·0	18·0	7·0	16·5	107·5
Colin McCallum, Pittsworth	Florence	34	10·0	26·0	17·0	6·0	16·0	104·0
F. M. Bradhurst, Baking Board	Clarendon	30	15·0	24·0	15·5	6·5	16·0	104·0
G. J. Will, Kincora, Pittsworth	Gluyas	27	18·5	18·0	17·0	5·0	19·0	103·0
M. Stower, Linthorpe, *via* Pittsworth	Warren	36	12·0	18·0	17·0	7·0	17·5	101·5
L. G. Morwood, Yalanga	Pusa	33	10·0	26·0	14·5	7·0	12·0	98·0
Mrs. L. E. Anderson, Southbrook	Warchief	33	17·0	12·0	16·0	6·5	16·0	96·0
A. L. Bridgeman, Southbrook	Duke of York	26	13·5	20·0	17·0	5·0	15·0	95·5
G. J. Will, Kincora, Pittsworth	Duke of York	20	19·0	15·0	18·0	4·0	19·0	95·5
J. W. Joppich, North Branch, Pittsworth	Cleveland	22	17·5	15·0	18·0	5·0	17·5	95·0
L. G. Morwood, Yalangar	Duke of York	22	17·5	18·0	17·0	5·0	15·0	94·5
R. C. Holthouse, Westbrook	Nabawa	22	15·0	15·0	15·0	4·0	15·0	86·0
Mrs. E. Gibbs, Brookstead	Currawa	22	10·0	12·0	12·0	4·0	9·0	69·0

* First in District Competition and Grand Championship. † Second in District Competition. ‡ Third in District Competition.

THE NEXT COMPETITION.

With a view to improving certain features in connection with wheat crop competitions, the Department of Agriculture and Stock submitted certain proposals to the Wheat Board. These were approved. The manager of the Wheat Board is seeking the co-operation of the several Agricultural Societies concerned.

Proposed Conditions.

(*a*) Crops are to be grown on "summer fallowed" land. Cultivation for same may commence on 1st to 30th October to follow the removal of any kind of crop, not necessarily wheat.

Judging of fallow to commence about the 1st May, 1931, under the following headings:—

Moisture	35 points.
Mulch	35 points.
Cleanliness	35 points.
Compactness	35 points.
Headlands and finishes	10 points.
Total	150 points.

Soil cores to be taken at depths of 6 in. and 18 in. for moisture content.

(*b*) The wheat crop competition to be carried out under similar conditions to that of last year. Crops to be judged immediately prior to ripening.

(*c*) Grain from competition crops approved for seed purposes and from larger fields of the same variety on the farm will be entitled to a bonus of 2d. per bushel from the Wheat Board on delivery in good, sound condition, fit for seed.

Entry fee, £1. Nomination, 5s., payable by 30th March, 1931. Balance of fee payable by 15th September, 1931.

ACKNOWLEDGMENT.

The judges desire to tender thanks to the manager and members of the State Wheat Board and the respective secretaries of the Royal National Association, Brisbane, the Royal Agricultural Society, Toowoomba, and the Eastern Downs Horticultural and Agricultural Association, Warwick, for their valued assistance in all matters connected with the competition.

QUEENSLAND SHOW DATES, 1931.

Stanthorpe: 4th to 6th February.
Allora: 18th and 19th February.
Killarney: 27th and 28th February.
Millmerran: 3rd March.
Pittsworth: 5th March.
Warwick: 10th to 13th March.
Toowoomba: 23rd to 26th March.
Oakey: 11th April.
Goondiwindi: 10th and 11th April.
Dalby: 15th and 16th April.
Chinchilla: 21st and 22nd April.
Miles: 29th April.
Taroom: 4th to 6th May.
Murgon: 7th to 9th May.
Boonah: 6th and 7th May.
Ipswich: 12th to 15th May.
Mitchell: 13th and 14th May.
Kilkivan: 20th and 21st May.
Biggenden: 21st and 22nd May.
Kalbar: 23rd May.
Wowan: 4th and 5th June.
Lowood: 19th and 20th June.
Mount Larcom: 19th and 20th June.
Rockhampton: 23rd to 27th June.
Kilcoy: 2nd and 3rd July.
Home Hill: 3rd and 4th July.
Townsville: 7th to 9th July.
Gatton: 8th and 9th July.
Cleveland: 10th and 11th July.
Caboolture: 16th and 17th July.
Rosewood: 17th and 18th July.
Ithaca: 18th July.
Esk: 24th and 25th July.
Maleny: 29th and 30th July.
Royal National: 10th to 15th August.
Wynnum: 28th and 29th August.
Imbil: 2nd and 3rd September.
Beenleigh: 18th and 19th September.
Rocklea: 26th September.

PUREBRED DAIRY CATTLE.

RECORDS OF PRODUCTION.

By CHAS. McGRATH, Supervisor of Dairying.

A FUNDAMENTAL consideration relative to the breeding of purebred cattle is increased attention to production recording.

Studmasters in the vanguard of dairy cattle breeding realise that registration alone is not a guarantee of progress, but in establishing blood lines based on profitable production, and by systematic recording, are developing families, or blood lines which are pure in high production traits.

The importance of production recording of dairy females is difficult to overestimate, and an extension of this work will ensure the gradual development and improvement of the individual animals constituting the purebred dairy herds of the State.

Production Records Essential.

The production records are essential as a basis for selection of animals possessing true dairy traits. In the main, high producers inherit such characteristics from their ancestors; and, while a perusal of the records of each animal is highly instructive, one should not overlook the importance of studying the blood lines of the qualifying females and realise the increase in production due to the influence of the prepotent sire.

Test recording in our purebred herds has been instrumental in bringing prominently before breeders and all interested in the industry the true value of purebred sires proved to be capable of increasing production in their offspring; and the demand for purebred sires possessing such characteristics has increased, as breeders are willing to pay good prices for sires bred on high production lines.

Production recording has created such a demand, but an extension of the activities of testing purebred females is essential to meet the demand, as the increased production of the dairy cow is the all-important problem of the dairy industry and the chief factor in the economical production of dairy products and efficiency in the dairying industry.

As the breeders of stud dairy stock give prominence to the testing of the females constituting their herds, the general dairy farmers will be induced to weigh and test the milk of their cows, and it is then that they will appraise the value of the blood that the stud breeder offers through the sale of his young stud sires, and will appreciate the work of our studmasters.

Production recording will convince the most sceptical of the definite value of blood lines and point conclusively to the fact that certain families are decidedly more productive than others, and in a striking way show the great difference that exists between individuals in the same breed.

Production recording is the source from which information pertaining to the type and productivity of the families of cows that laid the foundation of the high-class herds of the various dairy breeds is obtained.

What a fund of knowledge is available from a study of the production records! The lesson learnt places one in a position to overcome many of the difficulties that confront the stud breeder and dairy farmer in their quest to acquire a herd comprised of animals of productive merit and prepotency capacity.

Choosing a sire without regard to blood or family lines, or careless or haphazard selection of a dairy sire, increases the element of chance, and frequently defeats the stud breeder and dairy farmer from attaining their objective—increased production, increased profits, and a fixed type of dairy animal.

Outcrossing generally tends to increase the amount of variation in the progeny, as the sire and dam may have a large number of variations which will exercise an important influence on the power to transmit characteristic traits, such as production, type, colour, and temperament, to their offspring.

PRODUCTION RECORDING.

Cows officially tested by Dairy Inspectors attached to the Department of Agriculture and Stock, for entry into the Herd Book of the Australian Illawarra Shorthorn Society and the Jersey Cattle Society of Queensland. The final tests of the undermentioned cows were carried out during the months of September and October, 1930. (273 days periods unless otherwise stated).

AUSTRALIAN ILLAWARRA SHORTHORN.

Name of Cow.	Age.	Milk Production.	Butter Fat.	Sire.	Dam.	Owner.
		Lb.	Lb.			
Diana 17th of Kelston (365 days)	Junior (2 year)	17,430·2	721·255	First Warrior of The Cedars	Diana 7th of Jinbiggaree	A. Frank, Boonah
Fuchsia 11th of Fairlie	Junior (2 year)	6,095·5	216·326	Dividend of Rosenthal	Fuchsia 5th of Fairlie	C. B. Mitchell, Warwick
Amy 5th of Fairholme	Junior (2 year)	6,006·6	249·962	Regent of Greyleigh	Amy 3rd of Fairholme	Agricultural High School and College.
Wunulla Lustre 3rd	Senior (3 years)	9,350·879	377·69	Robin Hood of Greyleigh	Lustre 2nd of Wunulla	J. Bradley, Goomeri
Mayflower of Lawndale	Junior (3 years)	10,707·375	404·09	President of Oakvale	Mayflower of Lawndale	M. J. Brosnan, Clifton
Empress of Homelea	Junior (2 years)	9,414·5	366·072	Emperor of White Park	Damse of Homelea	Jas. Savage, Humphrey
Heather of Trevor Hill	Senior (2 years)	9,062·3	407·924	Prince of Praemer	Star of Trevor Hill	G. Gwynne, Umbiram
May 3rd of Beechwood	Junior (3 years)	7,625·75	333·32	Royal Lad of Blacklands	May of Beechwood	F. W. Woolley, Moregatta
Miss Mystery of Broadwater	Junior (2 years)	6,117·1	250·106	Fussy's Charmer of Fairfield	Mystery 2nd of Woodleigh	Pledger and Dodd, *via* Nanango
Choice 4th of Rosenthal	Senior (3 years)	7,942·5	309·646	Sunshine of Rosenthal	Choice 3rd of Strathdu	S. Mitchell, Warwick
Jubilee 4th of Rosenthal	Junior (3 years)	6,987·75	271·291	Sunshine of Rosenthal	Jubilee 3rd of Rosenthal	S. Mitchell, Warwick
Flossie of Lynfield	Junior (2 years)	4,598·3	189·756	Royal Monarch of Blacklands	Queenie 2nd of Lynfield	F. E. Birt, Sexton
Plum of Glenleigh	Mature	10,054·75	435·751	Alpha	Cherry of Glenleigh	C. O'Sullivan, Greenmount
Dandy II. of Brundah	Mature	10,820·55	364·409	Cupid of Greyleigh	Dandy of Brundah	B. C. Tuckett, Brookfield
Sweetheart 3rd of Illawah	Senior (3 years)	12,144·5	446·324	Veteran of Greyleigh	Sweetheart of Illawah	B. C. Tuckett, Brookfield
Mavis of Mt. Blow	Senior (2 years)	5,150·165	188·548	Brilliant of Greyleigh	Model 14th of Greyleigh	Mrs. J. Handley, Murphy's Creek
Cherry 3rd of Mt. Blow	Senior (2 years)	5,563·505	187·639	Brilliant of Greyleigh	Cherry 2nd of Mt. Blow	Mrs. J. Handley, Murphy's Creek
Favourite 8th of Fairlie	Mature	7,506·25	300·785	Charmer of Strathdu	Favourite of Fairlie	C. B. Mitchell, Warwick
Killarney 2nd of Fairlie	Mature	10,013·5	391·859	Kitchener of Rosenthal	Killarney of Fairliee	C. B. Mitchell, Warwick
Daisy of Wolvi	Junior (2 years)	8,365·9	282·749	Lucky Premier of Blacklands	Daisy of the Valley	V. Dunstan, Gympie
Model 2nd of Eden Vale	Mature	9,047·45	370,005	Karl of Ashborne	Model	H. Kinnear, Millaa Millaa
Maggie 2nd of Homelea	Junior (4 years)	8,833·25	318·585	Reflection of Springdale	Maggie of Homelea	G. D. Lindenmayer, Mundubbera
Trixy 6th of Strathdu	Mature	8,420·75	316·839	Admiration 2nd of Devon Park	Trixy 2nd of Strathdu	S. Mitchell, Rosenthal
Favourite 13th of Fairlie	Junior (2 years)	6,254	255·788	Dividend of Rosenthal	Favourite of Fairlie	C. B. Mitchell, Fairlie, *via* Warwick
Chance 5th of Fairlie	Junior (2 years)	7,271	270·064	Dividend of Rosenthal	Chance of Fairlie	C. B. Mitchell, Fairlie, *via* Warwick
Queenie of Huntleigh	Mature	9,292·5	343·326	Defender of Springdale	Queenie 3rd of Springdale	J. C. Savage, Humphrey
Venus of Euroa	Mature	11,761·75	467·045	Annie's Favourite Boy	Venus of Hillcrest	H. F. Lindenmayer, Mundubbera

PRODUCTION RECORDING—*continued.*

JERSEY.

Name of Cow.	Age.	Milk Production.	Butter Fat.	Sire.	Dam.	Owner.
		Lb.	Lb.			
Trecarne Magnet 2nd	Junior (3 years)	3,635·304	219·441	Carnation Royal Scot	Flora 24th	T. A. Petherick, Lockyer
Glengariffe Noble Diva	Mature	6,453·3	385·914	Retford Mendel's Noble	Madeira's Dahlia of Taraganda	R. V. Cox, Maleny
Glengariffe Noble Gaza	Mature	5,889·35	370·071	Retford Mendel's Noble	Willah's Gazette of Kameruka	R. V. Cox, Maleny
Foxglove of Southport	Junior (2 years)	7,282·597	377·589	Werribee Twylish Starbright King	Greta of Southport	J. Collins, Tingoora
Dainty of Calton	Junior (2 years)	5,720·407	298·070	Retford Meteor	Nellie of Millstream	J. Collins, Tingoora
Duchess of Calton (365 days)	Mature	17,090·081	771·281	Clair Val Hero	Trinity Montrose	J. Collins, Tingoora
Choices Silver Spray of Burnleigh	Mature	5,160·25	295·299	Trinity Baron	Britannia's Choice of Burnleigh	W. W. Mallett, Nambour
Trinity Olivia	Junior (3 years)	5,168	257·806	Lord Ettrey of Banyule	Brunette	J. N. Kidd, Kunioon
Easter's Elsie of Morago	Junior (2 years)	4,692·242	244·39	Molly's Goldfinder of Bellevue	Easter Day of Morago	P. C. Henman, Mudgeeraba
Golden Gilt of Woodstock	Mature	8,581·77	410·7	Golden Jolly	Bright Gilt 2nd of Woodstock	P. C. Henman, Mudgeeraba
Tot of Burnleigh	Junior (2 years)	6,489·75	347·206	Noisy Jim of Burnleigh	Trixie of Burnleigh	Chas. Klaus, Mundubbera
Oxford Bright Eyes	Senior (3 years)	7,867·375	428·762	Oxford Brighton King	Jersey Maid 5th	E. Burton and Sons, Wanora
Glenview Oxfordia	Senior (3 years)	5,221·35	265·894	Carlyle Larkspur 2nd's Empire	Oxford Buttercup 5th	F. P. Fowler and Son, Coalstoun Lakes
Trecarne Madeira 3rd	Junior (3 years)	4,669·985	282·733	Carnation Royal Scot	Trecarne Madeira	T. A. Petherick, Lockyer
Trecarne Flora 2nd	Senior (3 years)	4,992·025	293·552	Carnation Royal Scot	Flora 24th	T. A. Petherick, Lockyer
Majesty's Kate of Brooklands	Junior (2 years)	4,344·95	218·434	His Majesty of Dalebank	Sultan's Tibby of Brooklands	W. S. Conochie, Sherwood
Jessica of Brooklands	Mature	4,317·2	205·715	Golden Ferns Idyl	Jess	W. S. Conochie, Sherwood
Lily's Maid of Southport	Junior (2 years)	6,795·5	279·548	Werribee Twylish Starbright King	The Maid of Southport	J. and R. Williams, Kingaroy
Kelvinside Amber	Junior (3 years)	9,570·95	468·704	Springmead Tarzan	Diamond of Cedar Grove	J. and R. Williams, Kingaroy
Kelvinside Alice Arabel	Senior (2 years)	6,887·35	363·575	Benedictine's Perfection of Kelvinside	Alice May of Kelvinside	J. and R. Williams, Kingaroy
Bluebell 2nd of Southport	Junior (2 years)	5,290·1	251·728	Werribee Twylish Starbright King	Blue Bell of Southport	J. and R. Williams, Kingaroy
Poppy of Southport	Mature	6,233·626	352·478	Trinity Alfriston Duke	Orange of Southport	J. and R. Williams, Kingaroy
Britannia of Rosehill (257 days)	Junior (2 years)	5,380·6	302·294	Raleigh's Lad of Rosehill	Queen of Rosehill	T. Gillespie, Ravenshoe
Memony of Rosehill	Junior (2 years)	5,287·15	296·812	Retford Raleigh's Chief	Charm of Rosehil	T. Gillespie, Ravenshoe
Trinity Dahlia (264 days)	Mature	4,994·75	265·872	Ginger Duke	Trinity Maid	T. Gillespie, Ravenshoe
Glenview Alfriston Duchess	Junior (2 years)	4,444·8	269·98	Trinity Alfriston	Oxford Buttercup	F. P. Fowler and Son, Coalstoun Lakes
Trinity Skylight	Senior (3 years)	4,341·95	249·846	Lord Ettrey of Banyule	Starlight	F. P. Fowler, and Son Coalstoun Lakes
Choice's Mascot of Burnleigh	Mature	4,962·65	313·825	Trinity Baron	Britannia Choice of Burnleigh	W. W. Mallett, Nambour
Jewel of Burnleigh (365 days)	Junior (2 years)	7,530·55	435·862	Trinity Darby	Chains Gem of Burnleigh	W. W. Mallett, Nambour
Bellefaire Claire De Lune	Junior (2 years)	6,312	302·736	Masterpiece Yeribee of Bruce Vale	Madeira 3rd	D. R. Hutton, Cunningham
Princess 2nd of Ferndale (365 days)	Junior (4 years)	11,726·25	536·515	Janet's Palatine of Rosedale	Princess Galatea of Woodlands	D. R. Hutton, Cunningham
Songbird of Burnleigh	Junior (2 years)	4,496·25	249·985	Trinity Darby	Carlyle Wrentham Princess	Chas. Klaus, Mundubbera
Miss Chain of Golden Hill	Junior (2 years)	4,056·5	261·222	Trinity Triumph	The Endless Chain	Chas. Klaus, Mundubbera
Inasfayl Bessie	Senior (4 years)	5,737·2	327·864	Norwood Model	Inasfayl Betsy	McGeehan Bros., Kairi

Line Breeding.

Line breeding has played an all-important part in the improvement of domestic live stock. Breeders of stud dairy stock whose work has resulted in the establishment of herds noted for productivity have given careful consideration to the selection of the females on a production basis, and by breeding them to sires from ancestry of high production restricted their breeding operations to well-defined blood or family lines, excluding everything outside the approved and chosen lines of breeding.

Methodical line breeding combines animals similar in characteristics, and confines the blood lines to a few families of related lines of descent, purifies the pedigree, checks variability and increases prepotency.

Applied intelligently by studmasters, systematic line breeding during the past century has greatly increased the value of the domestic live stock. The results achieved are strikingly evident from the increased milk production of representatives of the several breeds of dairy cattle.

The increased production recorded in individual animals in all dairy breeds in recent years and the present activities of breeders are an indication of greater progress that is to follow.

A successful breeder of dairy stock will be one who has assessed the value of his herd by systematic recording—the only sound system of determining values.

A perusal of the results of official production recording for entry into the advanced register of the different breeds of dairy cattle will disclose the names of breeders pursuing the quest for the best dairy cow.

GRASS SEED IN EYES OF SHEEP—TREATMENT.

Because of the heavy growth of grass this season trouble is occurring as a result of the seed getting into the eyes of sheep. This especially is the case where barley grass (sometimes called fox-tail) and corkscrew grass have seeded very freely. The seed quickly causes inflammation, and if attention is not given to the animal total blindness will often occur.

Wherever practicable the sheep should be kept out of the long grass at this time. In cases where the seed has already caused trouble the foreign matter should be removed as quickly as possible from the eyes. This can usually be done with the fingers or a small pair of tweezers, but the eyelid should be carefully turned back to make sure that no seeds remain. Any excess of wool round the eye should also be clipped away.

The animals should then be treated with one or other of the following lotions, both of which have proved very effective:—

1.	Iodine	3 grains.
	Potassium Iodide	6 grains.
	Water	2 ounces.
2.	Sulphate of Zinc	1 part.
	Water	40 parts.

Equal to one dessertspoonful of zinc sulphate in half pint water.

The sheep should be held with the head on one side and the eye directed upwards. Several drops of the lotion are then instilled into the eye by means of an eye-dropper or piece of cloth saturated in the lotion. In doing this the eyelids should be drawn away from eyeball and care taken to see that the lotion flows under the lids and reaches all parts of the eye. When practicable this treatment should be repeated daily, when a rapid return to normal can be expected.

When severe cases have been drafted out these should receive more constant treatment. Gummed eyelids should be separated by bathing with warm water, and when the eyes have been cleaned the lotion should be applied twice daily. In the treatment of valuable or stud animals it is advisable to augment the above treatment by the application of the following ointment:—

Yellow oxide of mercury ointment	1 part.
Vaseline	9 parts.

This ointment should be introduced under the upper or lower eyelid after the early soreness had disappeared. The treatment should be continued until recovery has taken place.

As previously indicated, if not treated promptly the sheep may become temporarily blinded, and in the animal's wanderings the trouble becomes intensified. The moisture which comes from the eyes as a result of the inflammation causes dampness on the cheeks, predisposing the sheep to blow-fly attack.—A. and I. Notes, N.S.W. Dept. Agric.

Answers to Correspondents.

Feather-eating Fowls.

"POULTRY" (Torbanlea)—The Poultry Expert, Mr. P. Rumball, advises as follows:—

Feather-eating is a vice usually contracted by birds accidentally obtaining a feather the quill of which contains blood. Fowls are very partial to blood, and they naturally look for more feathers, with the result that the vice soon spreads through the pens. This habit is noticed more frequently among stock confined than with those on range. To break the birds of this vice it is necessary to try to occupy their attention. Make them work for the grain portion of their ration by feeding it in litters. Feed frequently. Give liberal supplies of green feed, and keep them apart as much as possible. This can be done by giving them free range.

Cowpeas and Soy Beans as Pig Feed.

In answer to an inquiry as to the use of cowpeas and soybeans in the feeding of pigs, we have to advise that neither of these crops can be looked upon as among the best from a green food point of view, for in the case of cowpeas, pigs do not appreciate the vines of this plant to anything like the extent that they do in the case of field peas, and we have seen many instances in which pigs refuse to eat cowpea vines at all, except when they are cut down and allowed to wilt for a couple of days. The soybean plant is also rather fibrous, and is not altogether palatable; hence, in both cases, better results will be obtained from the grain. If it can be arranged, it would be preferable to grow both these crops in combination with maize. The book, "Potts on Pigs," has an extensive reference to these matters in the chapters dealing with feeding, commencing on page 82 and the particular references on pages 138 and 139. This book may be purchased at booksellers at 12s. 6d. or 13s. 6d., post free, and is well worth careful study.

If, say, cowpeas are grown in combination with maize, and both crops are fed off at the one time, the pigs would have a good balanced ration, provided some more succulent green food was available, plus water or milk.

Soy beans are not grown very much in this country as a pig food, and considerable care must be exercised in feeding them to pigs, particularly during the fattening stages, otherwise the resultant pork may be soft and oily, and therefore unsatisfactory to the bacon curer. Both crops give an appreciable yield of grain, and where judiciously handled in combination with nitrogenous and fat-forming foods, are well worth cultivation.

Cowpeas are grown extensively as green manure in the Northern portions of the State. Soy beans do particularly well on the Darling Downs, and if fed in combination with lucerne, provide a good ration.

Ailing Sow.

G.H.T. (Oakey)—

Apparently the sow has not been suckling her young as she should, either because she had an insufficient supply of milk, or has a number of blind teats. Possibly the sow suffered from milk fever after farrowing and lost most of her milk, or perhaps the suckers have bitten her teats and have irritated her to such an extent that she has refused to suckle them to anything like the extent she should. It may be, also, that the sow is too low in condition or has not been properly fed or managed, and it may be due to inferior breeding and the effects of in-breeding. Lack of vigour, a poor milk supply, and other abnormalities like this are often hereditary. There are cases, too, when pigs may have proper food, breeding, and feeding, but are housed under insanitary conditions and fed from troughs polluted with filth and the germs of many diseases. It would be preferable to add the iodine to the sow's food and not to the young pigs' food.

A complete change of diet, ample grazing over succulent pasture, a liberal supply of fresh water, and plenty of charcoal and bone meal will help, while sound grain crushed and soaked or boiled for very young pigs is essential. The use of concentrated foods and of stock tonics in cases where the stock are not doing well is also good practice. Watch the sow carefully to note that she is not suffering from constipation and give her a change of food, and we are sure good results will follow.

General Notes.

Grade Standards for Tomatoes.

The Governor in Council has approved of an amendment of the Regulations under "*The Fruit and Vegetables Act of* 1927" applying to grade standards for tomatoes. In future there will be two grades only for tomatoes instead of three as formerly. "B" and "C" grades have been rescinded and a new "B" grade substituted. The latter will provide for the marketing of sound fruit subject to skin blemishes as prescribed under the Regulations. The present Regulations exclude sunburnt tomatoes, but it was thought that slightly sunburnt fruit was just as suitable for marketing as other blemished fruit, and consequently provision is also made for such tomatoes by allowing fruit sunburnt to the extent of 2½ per cent. of its surface to be marketed.

Local Sugar Cane Prices Boards' Elections.

In connection with the forthcoming elections for representatives of canegrowers on Local Sugar Cane Prices Boards an Order in Council has been issued removing all members of such Boards throughout Queensland who were appointed by notices dated the 27th March, 10th April, 10th July, 24th July, and 11th September, 1930. These members were appointed for the 1930 crushing season only, and, as this season is now finished, these members have been removed in order that new members may be appointed for the 1931 season.

Candidates for election as representatives of Canegrowers on Local Sugar Cane Prices Boards must be nominated on or before the 31st January, 1931.

Atherton Tableland Maize Board.

Nominations will be received by the Returning Officer, Department of Agriculture and Stock, Brisbane, until 5 p.m. on the 18th February, 1931, for election as growers' representatives on the Atherton Tableland Maize Board.

Five such representatives are to be elected by growers who, subsequent to the 25th day of March, 1930, grew for grain within the petty sessions districts of Atherton, Herberton, or Chillagoe, at least 1 acre of maize, and delivered the product of same or part of same to the Board for sale.

Each nomination is to be signed by at least ten growers of maize as above.

Persons eligible to vote are invited to send their names and addresses at once to the Under Secretary, Department of Agriculture and Stock, Brisbane.

Staff Changes and Appointments.

The following persons residing in the Innisfail-Tully districts have been appointed Honorary Rangers under the Animals and Birds Acts for the purpose of protecting bird life in those districts:—Messrs. M. McNamee, Japoon, via Innisfail; J. Turco, Silkwood; J. A. Winter, Nuramo; R. C. Jackson, El Arish; G. R. Blair, Tully; and J. J. Cran, Tully.

Mr. F. J. Harris, Assistant to Analyst, has been appointed Analyst, Agricultural Chemical Laboratory, Brisbane. Mr. R. A. Taylor, Clerk, Chief Office, has been appointed an Inspector under the Fertilisers Act, Pure Seeds Act, Stock Foods Act, and Pest Destroyers Act, Department of Agriculture and Stock.

Mr. W. R. Holmes, District Inspector of Stock, Townsville, has been appointed also an Inspector of Dairies. The Officer in Charge of Police at Theodore has been appointed an Acting Inspector of Stock. The services of Messrs. J. R. Canty (Temporary Inspector of Slaughter-houses) and J. J. Purcell (Temporary Stock Assistant) have been continued for six months as from the 1st January, 1931. The resignation of Mr. R. J. T. Kidd as an Inspector of Stock as from the 23rd December, 1930, has been accepted.

The appointment of Mr. P. J. Hughes as an Acting Inspector of Stock at Cania has been cancelled as from 1st January, 1931.

Mr. E. Graham, Under Secretary and Director of Marketing, or a Deputy appointed by the Minister, has been reappointed a Member of the Committee of Direction of Fruit Marketing for a further period of one year until the 31st December, 1931.

Banana Levy Regulations.

Regulations making provision for a levy on bananas were passed on the 1st September, 1927. Such levy is payable by growers of bananas marketed in Queensland, and the rate of the levy is fixed at 1d. for every £2 or part thereof of the nett proceeds realised from sales. The levy, which is made by the Committee of Direction of Fruit Marketing, operated until the 31st December, 1930. A regulation has now been passed extending the levy to all bananas marketed until the 31st December, 1931.

Branding of Bags and Packages of Fertiliser.

Regulation 10 under the Fertilisers Act has been rescinded and a new regulation inserted in lieu. This new regulation provides that, in addition to the printed label affixed to each package of fertiliser, every producer shall durably and legibly brand or stamp every package with a brand distinguishing and identifying all fertilisers sold by him or under his name in Queensland. The brands, marks, figures, or lettering appearing on any package of fertiliser must be such only as indicate the true producer of the contents of the package, and no person shall sell, pack, or supply fertiliser in a package unless all other brands, &c., have been first obliterated from the exterior of such package, and from any label attached thereto. This regulation has been rendered necessary to obviate the difficulties arising from the use of second-hand containers on which previous brands have not been obliterated before further use.

Traffic in Canary Seed.

An Order in Council has been passed giving the Canary Seed Board power to deal with traffic in that commodity. The Acts now provide that all canary seed must be delivered by the growers to the Board or its agent by the nearest practicable railway under conditions fixed by the Board by notice published in any newspaper circulating in the districts concerned. Except for delivery to the Board or its agent, no grower may remove any of the commodity from his premises without the prior consent of the Board. No person shall remove any canary seed except with a permit from the Board. Such permit will give the conditions and period of duration for such removal. The Board may refuse to grant a permit. The permit must be carried and be produced for inspection by any member or inspector of the Board or member of the police. These restrictions apply only to canary seed grown in the petty sessions districts of Toowoomba, Allora, Warwick, Clifton, Pittsworth, Oakey, and Stanthorpe. Any member or inspector of the Board or member of the Police Force may, at any place within a radius of 100 miles from the boundary of the said petty sessions districts, examine any vehicle suspected of carrying canary seed, and may seize any of the commodity found. The Commissioner for Railways or any ship-owner may, on the request of the Board, without incurring liability, refuse to carry any of the commodity.

Fatness is not Fitness.

Fat in a horse, like charity in a man, covers a multitude of sins. Is a horse slack in the loins and weak in the back? Lay on fat. Is he deficient in "second thigh" and muscle? Lay on fat. Are his ribs short or flat? Blubber will hide the defect. Many a raw beginner has been bitterly disappointed on taking home a prize-winner, and putting him on natural food, to find the brilliant performer in the ring dwindle into a lean and lanky weed, in which the seeds of cureless disease have been plentifully sown. But good judges should not be taken in by such tricks.

One argument brought forward in favour of fattening is easily disposed of. It is said that the farmer ought only to buy a horse that is a good "doer"—that is to say, a horse that does justice to his food. The answer is that a horse that really assimilates his food well will put on muscle, not fat; and it is muscle that we want. If a horse, instead of putting on muscle under wholesome treatment, puts on fat, that horse is not a good, but a bad "doer." Fat in a horse should be looked upon, not as a merit, but as a deformity and a disease.

Who can imagine that a trial of strength between a fat horse and a lean, muscular horse would have the same result. We need to breed strength and wind—not beef. There is no physiological argument that can be brought forward in defence of fat against muscle, and lovers of horses hope to see the day when fat shall be considered as much a blemish in a carthorse as sidebone or roaring.—"Live Stock Journal" (England).

Cows' Water Consumption.

Knowing that a cow needs a great deal of water if she is going to produce a heavy flow of milk, which is made up of about 87 per cent. of water, an American scientist representative of the Department of Agriculture decided to find out how to get the cow to do more drinking. He located a modern dairy "barn" in which automatic drinking cups were installed for the convenience of the animals, and began sitting up with cows at night.

After several nights of constant observation he arrived at the conclusion that if they have the opportunity cows drink more between 5 o'clock at night and 5 in the morning than they do during the other twelve hours of the daily cycle. That, he believes, accounts in large part for the increased milk flow which follows the installation of automatic drinking cup equipment in the barns.

Reports indicate that water bowls increase milk production from a little to as high as 30 per cent., depending upon how much water the cows were able to get before the automatic system was installed.

Extension of Northern Pig Board.

The Northern Pig Board was constituted in 1926 for a period of five years ending on the 31st December last. An Order in Council of the 2nd October last gave notice of intention to extend the Board for a further five years, and, as a petition for a referendum was received within the prescribed time, a ballot was held, resulting:—

For the continuance	139 votes
Against the continuance	109 votes

As the majority was in favour of the continuance, an Order in Council has now been issued extending the Northern Pig Board for a period of five years as from the 1st January, 1931, to the 31st December, 1935.

Canary Seed Board.

Nominations will be received by the Returning Officer, Department of Agriculture and Stock, Brisbane, until the 20th January, 1931, for election as Growers' Representative on the Canary Seed Board for the period as from 1st March, 1931, until the 28th February, 1932.

Two such representatives are to be elected by canary seed growers, and each nomination is to be signed by at least five growers who have grown canary seed between the 1st day of March, 1930, and 28th February, 1931.

The Stanthorpe Fruit and Vegetable Levy.

Regulations have been issued under the Fruit Marketing Organisation Acts, renewing for another twelve months the levy on Stanthorpe fruit and vegetables. The levy is 10d. per ton on all fruit and vegetables grown within a radius of 40 miles from Wallangarra, and railed from any railway station from Wallangarra to Dalveen, and from Amiens to Fleurbaix, these stations inclusive.

Where more than one grower contributes fruit or vegetables to any one consignment, the total amount of the levy payable shall be paid in proportion by the different growers, there being a minimum of 1d. in respect of any one consignment by any grower who, in his own name or otherwise, contributes any fruit or vegetables to the consignment.

The extension of the levy has been made at the request of the Committee of Direction of Fruit Marketing. The manner of making the levy is that a resolution shall be passed by the Committee of Direction that the levy be made, and thereupon the Committee shall give notice prior to the 19th December by advertisement of the levy, and upon its publication the levy will be deemed to have been made.

The growers liable to pay the levy must pay it to the Commissioner for Railways on behalf of the Committee of Direction at the time the various consignments of fruit and vegetables are being railed.

The levy will be expended in the payment of any expenses attaching to its collection, the balance to form part of the general funds for administrative purposes, and be utilised by the Deciduous Sectional Group Committee. The levy will operate for twelve months as from 19th December, 1930.

The Home and the Garden.

OUR BABIES.

Under this heading a series of short articles by the Medical and Nursing Staff of the Queensland Baby Clinics, dealing with the welfare and care of babies, has been planned in the hope of maintaining their health, increasing their happiness, and decreasing the number of avoidable cases of infant mortality.

THE FOOD OF MAN.

MAN thinks he eats what he likes; in reality he is the slave of custom. Primitive man ate whatever he could get. The Australian ate flesh, fowl, and fish, not despising lizards, snakes, and grubs. His women dug up fern roots, yams and bulbs, and gathered the seeds of grasses and the scanty fruits of the bush. Only in the small area and short season when the bunya nuts were plentiful did he enjoy an abundant vegetable diet. Meanwhile in other continents man succeeded in domesticating various animals. His flocks and herds gave him a constant supply of meat and milk, and his fowls eggs. He also learnt to grow cereals, vegetables, and fruits. Under favourable conditions he had now a wide choice of food, and under the stress of hard conflict and much experience he evolved food customs of high value, which lasted him long. Later and more complex civilisation provided much more varied choice of diet, and his food customs changed slowly and for the worse. We have good evidence that the average food of the British race is less fitted to secure healthy manhood than that of many other living races.

It is only very recently that science has come to this conclusion, and only after very long and patient investigation, inquiries, and experiments. These are as yet far from complete, but enough has been established to show that civilised man is slowly deteriorating from foolish excess in some constituents of his diet, and from still more harmful deficiences in other constituents.

A Healthy Diet.

Just as a fire cannot live without fuel, no animal can live without food. Food supplies the energy consumed in muscular work and in all other vital processes; it supplies also the energy needed to maintain body warmth. This energy is derived mainly from two classes of food elements. Firstly, starches, sugars, and other bodies to which we apply the name carbohydrate form the main source of human bodily energy in most cases. Starches are largely contained in wheatmeal, oatmeal, barley meal, maize, potatoes, rice, sago, tapioca, arrowroot and other vegetable products. Sugars are found naturally in fruits, sugar-cane, beet, and honey. By chemical processes we obtain pure sugar and golden syrup. In these forms sugar is very often taken in excess. Milk contains a special variety of sugar. Secondly, a very concentrated source of energy is provided by edible fats and oils. These we obtain mostly from cream, butter, and fat meats such as bacon or suet, though they are also present in some vegetable foods, such as olives, peanuts, and cocoanuts.

We may compare the body to an engine and our food to its fuel, but our food has not only to supply the necessary energy—it has also to repair the wear of the engine itself. For this a third class of food elements, which we call proteids, is needed. There are many varieties of proteids, and these vary much in their food value. Animal proteids may be classed in order of value as those of milk, eggs, meat and fish. The two first and especially those of milk stand highest. Proteids are also contained in varying proportions in vegetable foods. They are most abundant in beans and peas, and to a less degree in wheat and oats. Man has great difficulty in obtaining all the proteids he needs from vegetable foods; to children it is impossible. More especially without milk it is impossible for children to thrive at their best, and after milk comes eggs. Proteids may also be used as a source of energy, but not an economical source. So used they are expensive to buy, and impose unnecessary work on the organs of nutrition and elimination.

The amount of proteid needed for the daily diet by adults is not large, and an excessive intake of meat is a common error. The young need considerably more proteid to provide for growth of the tissues as well as to keep them in good repair.

These three classes of food provide energy and repair the bodily engine, but they are far from constituting a complete diet. Excepting the bones, all the tissues of the body contain more water than anything else, and without a liberal supply of water life is soon cut short. Nor can we live without salt. For the bones and teeth we need lime and phosphates. These exist in green vegetables, but their best source of supply is milk. For this reason also milk is a most important food for all children. A small supply of iron is necessary—without it red blood cannot exist. For healthy persons sufficient iron is contained in green vegetables, egg yolk and meat. A minute proportion of iodine is essential to life. This is usually sufficiently provided for in green vegetables, but in some districts of Australia—not, so far as we know, in Queensland—the soil is deficient in iodine. Consequently the vegetables growing on it are also deficient, and growing children develop enlargements of the thyroid gland sometimes called goitres. The foods most rich in iodine are sea fish and oysters.

So far we have learnt much from the chemistry of food. But we have learnt also that animals carefully and liberally fed with pure foods containing all these chemical constituents surely and inevitably waste and die. Some substances unknown to the chemist are a necessary part of our diet. These we call vitamins and they must be the subject of another article.

THE EDIBLE PODDED PEA *(Kiefel)*.

This vegetable, highly esteemed and grown by every farmer in Switzerland, Germany, and Austria, should not be confused with the local-grown "poor man's bean"; it is of much more delicate nature. Bringing a few seeds with me when I returned from Switzerland in June last, I was simply astounded at their rapid growth and development. While in Europe they attain a height of approximately 3 feet; they grew up to seven and producing pods liberally. The method of growing is just the same as that of any ordinary garden pea, on sticks. The pod should be picked when still green and tender, ends cut off and boiled for from ten to fifteen minutes. The pods must not be cut, and served with a white sauce are of a sweet and delicious flavour. It is essentially a winter vegetable for Queensland, as planting mine in September I experienced that it was already too late in the season. They thrive in any soil where peas will grow. From a marketing point of view it appears to me doubtful that it should prove a safe investment as the pods are very light and such a number go to the pound that the price automatically would be high, but to grow them for home consumption they may be highly recommended as a very delicious vegetable.—Paul Donnier, Kelvin Grove, Brisbane.

VALUE OF ROTTED MANURE.

"Rotted manure" is a term frequently met in gardening handbooks, and questions are often asked regarding its value in comparison with fresh manure. Rotted manure varies very little in composition from fresh, but on the whole is somewhat richer, owing to the fermentation of the insoluble organic matter, the disappearance of which increases the proportionate amounts of soluble organic matter and fertilising material, especially organic nitrogen compounds and phosphate of lime. Old manure is not so likely to burn the plants as fresh manure, which becomes hot owing to fermentation. The preliminary heating that old manure undergoes is also likely to destroy the germinating power of any weeds it may contain.

Fresh manure, owing to its loose texture, has a tendency to cause the soil to dry out, and on light soils, especially during the warm months, its application may be harmful. It should, therefore, be applied some time before the land is required for cropping. If land into which fresh manure has been dug is cropped immediately, frequent waterings must be given in order to regulate the soil temperature and prevent overheating through the manure's rapid decomposition.

From the foregoing it will be seen that well-rotted manure is much to be preferred to fresh.

THE FLOWERS OF THE BUSH.

World travellers may revel in the beauties of the sea, of landscapes, of waterfalls, of mountains, and of snow, but our natural beauty spots—the home of our native flora—present scenery unsurpassed in any part of the world.—Mr. Harry F. Walker, Minister for Agriculture and Stock.

INTRODUCED by Mr. Harry F. Walker, the Native Plants Protection Bill, having for its object the preservation of indigenous flora, met with a cordial reception in the Legislative Assembly just before the end of the last session, and some notable speeches, from which the following extracts have been made from the "Hansard" report, were delivered on its second reading.

SPEECH BY THE MINISTER.

In commending the measure, Mr. Walker said that although it was a small Bill, and one which might be regarded as having very little commercial value, still it was necessary, for it was their bounden duty to preserve the beautiful flora in which Queensland is so rich.

At the outset it was well to remember that in this country Nature had endowed its people with a fund of great beauty in its native flowers, ferns, and orchids. World travellers might revel in the beauties of the sea, of landscapes, of waterfalls, of mountains and of snow, but their natural beauty spots—the home of their native flora—presented scenery unsurpassed in any part of the world.

Although at the present time (continued Mr. Walker) we may not value these plants, in the future they will be of immense value. I went for a walk the other week, and I saw carload after carload of ferns and orchids coming from Mount Tambourine. One may see carloads of native flora coming in every Sunday; and I do not think this is a fair thing, and it should be prohibited. Of course, many scrubs are held privately at the present time. It may be necessary to cut these scrubs down, and I would sooner see the ferns given away than burnt. We should, however, prevent the wholesale destruction of our native flora. We have some wonderful orchids in Queensland, and they can be found from Southern Queensland right up to North Queensland. On Mount Tambourine, on the Blackall Range, and in the scrubs of the Mary Valley, and on the Atherton Tableland we have a very large variety of beautiful ferns and other flora which will be appreciated more as years go on.

Something like twenty-five years ago the Department of Public Lands made several reservations between Brisbane and Gympie, and anyone travelling by train has only to look at these reservations to appreciate their value. These reservations give the public some idea of the beauty of our coastal jungles. Only recently I found that many of the trees on these reservations had been ringbarked for a paltry sheet of bark. That is an impossible state of affairs. I should like to see these reservations handed over to the administration of the Railway Department so that the lengthsmen could see that the flora is properly protected. The same thing would apply to many other reservations where the lengthsmen going to work would consider it a pleasure to stop the wilful destruction of the flora that takes place from time to time. On the Kyogle line there are some of the finest beauty spots possible, abounding in ferns, orchids, and all kinds of plants. These areas are too rough for commercial use. The commercial timber has been taken away; but the natural scrub is left, and these areas should be reserved for the protection of the native flora. It is in the rugged gullies that you see the tree ferns; but, unfortunately, the motor car has brought these places within easy distance of the metropolis. Again, motor picnic parties go up our rivers, and they come back loaded with valuable plants plucked indiscriminately.

Information we have received gives some idea of the wilful destruction that has taken place on the islands of the North. In the case of the islands, particularly those in Torres Strait and the Barrier Reef, the matter is still more serious, inasmuch that the plants, particularly orchids, are exported in enormous quantities overseas to China and other countries in Eastern Asia.

We have also proposed to investigate the possibility of the planting by local authorities of grasses and other plants along river banks and foreshores to prevent erosion or stabilise moving sand dunes. As hon. members are aware, all along the coast of Queensland vast quantities of sand are blown away by the wind. It has been found in the Rockhampton district that one grass in particular can be grown

on the foreshores for the purpose of binding the sand and preventing its removal. Something of this sort is very necessary at almost all our seaside resorts. We find that in the Rockhampton district much harm has already been done, and the Bill will help us to protect the shores in this way.

It is also proposed to carry out experiments of a commercial character out West. I understand that the Commonwealth Government went into the matter to a certain extent, but there is no reason why we should not carry out experiments to see whether sheep and cattle will not eat something else besides grass. I can assure hon. members that there is plenty of scope for investigation. If we planted shrubs on Government reserves, no matter how expensive those experiments might be, we would have to pass legislation for the purpose. We might even have to acquire land, but, under the Bill, the Government, local authorities, or any other public body may make a recomendation with a view to the proclamation of an area to which the protection of the Bill may be extended.

A Common-sense Measure.

I have run roughly over the provisions of the Bill, and I am sure that hon. members must have gained some idea of what the Bill sets out to do. It is a measure which we ought to pass. If we go on in the way we have been doing as regards native plant life, the time will soon arrive when we shall have little or none of it left. Hon. members will readily appreciate that our orchids, tree ferns, and staghorns are being destroyed, and how they might easily be grown again. At Sandgate or any of our coastal suburbs there is nothing to prevent them from being replanted and growing as luxuriantly and beautiful as ever. Hon. members may say that the local authorities have power to deal with the matter; but, unfortunately, they have not got enough power, and they have repeatedly asked for greater power. This Bill is designed not only to give them greater power, but also to give the Government the necessary extreme power to protect the areas I have described. The Bill is a common-sense measure, and I am sure it must commend itself to hon. members.

SUPPORTING SPEECHES.

Mr. Bedford's Address.

Mr. Randolph Bedford (*Warrego*) congratulated the Minister and the Government on the introduction of the Bill.

It is only recently (he added) that a similar measure was introduced in New South Wales, where the need for it was much greater than it was in Queensland, owing to the larger population and the consequent greater proportion of hoodlums, Goths, and vandals intent on the destruction of indigenous plants.

I disagree with the Minister in thinking that there is no financial side to this question. If you destroy the beauty of a country, which is intended to be one of the finest tourist resorts on earth as soon as the world begins to know it better, then you are surely destroying a large amount of the attractive power, which means money. I understand from the Minister that £20,000 worth of the plants on the islands are alleged to have been sent to Germany in one year.

The Secretary for Agriculture: I was told so.

Mr. Bedford: I thoroughly believe it. These people on the other side of the world have a more lively interest in these things, and a greater sense of the value of this unique beauty, which we despise because it is so close to our doors. They value it because of its exotic value; but we dispise its value because of its commonness. I remember, in Tokio some years ago, seeing 4,000 Carpentaria finches in cages, and I was so annoyed at seeing my fellow countrymen in such circumstances that for the moment I had the one idea of opening the cage and allowing them to go. I decided, however, that, if I did let them go, they would still be in Japan; and as there were a thousand indignant Japs standing around, I decided to take my feelings with me away to Australia. (Laughter.)

AUSTRALIAN FLORAL BEAUTY.

Australian floral beauty is appreciated by very few people. Mrs. Ellis Rowan made a labour of love drawing Western Australian wild flowers until later she got a gallery of 400 pictures. The lady never made a penny out of it; but, after her death, I believe they were sold to a foreign collector for £10,000. Anyone who has seen the beauty of 20 to 30 miles of amaranths on the Western Australian plains, or 10 to 15 miles on Sturt's Meadows, outside Broken Hill, of the black and red Mephistophelian beauty of Sturt's desert pea, knows that every part of Australia

has its own distinctive beauty which must be recognised and protected. The shame is that Australia was nearly 160 years old before there was ever any attempt made to protect the local flora, particularly in the oldest State of the lot—New South Wales.

When Captain Cook arrived on that day in April 160 years ago, not seeing the country at its best, and yet named it Botany Bay, one would have thought that that was the beginning of the recognition of the beauty found in those early times. But for the first forty of fifty years of Australian settlement the early comers to Australia cursed the country for its ugliness and its barrenness, because they sowed wheat in March and expected it to be at its best in June, as was the case on the other side of the world. Of the number of officials who came to Australia in those times this country had only half a dozen friends, Captain Phillip—one of the best men who ever opened up a new country—and Banks, Solander, Bass, and Flinders had the scientists's mind. . . .

We have seen native trees destroyed, and foreign trees grown—not in the bush, but in civilisation and in the cities. We have seen the kangaroo, emu, and the lyre bird killed and the rabbit and the fox introduced—the rabbit allegedly as food, and the fox for the alleged sport which Rudyard Kipling described as "the pursuit of the uneatable by the unspeakable." (Laughter.) Similarly prickly-pear, St. John's wort, sweet briar, and all such vegetable pests have been imported, and distinctive Australian flora—flora of the oldest country geologically in the world—ruthlessly destroyed.

The gum-tip craze of the suburbs has wiped out large quantities of forests around Sydney. The little remnants of forests that have been left, including the waratah, have been destroyed. . . . One can only visualise the wonder that Sydney must have been before man destroyed it by finding up the Hawkesbury occasionally in some almost inaccessible canyon the waratah, the native rose, the giant lily, and other samples of Australian flora.

To-day with the advent of the motor-car the ability of the hoodlum to destroy this beauty has been increased a thousandfold, and it has been necessary in New South Wales to introduce a Bill with more drastic penalties than are provided in the Bill now under discussion. The Act there permits of immediate arrest, and the penalties are just as great as they are here, but the arrest is certainly necessary. . . .

America has largely destroyed all her rural beauty except those which have been State protected. A tremendous amount of money has been spent in making those tourist resorts. The American owner of private land is the man who is continually cursing the motor magnate who descends on his land and, finding it beautiful, leaves it ugly. . . . There was a man named Victor Daly—a pure Celt, a poet—who lived in Sydney, and who could take this extremely spiritual view of a thing which most people destroyed in ways most grossly material—

"I smell the rose upon the tree,
Who will may pluck and wear for me,
May wear the rose and watch it die,
And leaf by red leaf fade and fall,
Till there be nothing left at all
Of its dear loveliness, but I
Love it so well I leave it free:
The scent alone I take with me."

The majority of people would not only have taken it, but would have taken it by the roots and either have deserted it or sold it for twopence to a Chinaman. (Laughter.)

Slowly we are using Australian eyes to see the beauty of our own marvellous land. There is a fine firm of seedsmen and nurserymen in Sydney—Yates and Company—who have taken on the beautiful things of the Sydney sandstone country—the waratah, the native rose, the flannel flower—and have brought them to such a stage of perfection in their own nurseries that now you can buy them as you would any imported plant. There are very few in Queensland, because no one has ever decided to transplant the beauties of the Sydney sandstone to the Brisbane schists. I have made the waratah bud here from sticks, which is another proof of the wonderful country we have here. The Greater Brisbane selection of city flower shows generally the disregard we have for the Australian flora. The city selected the poinsettia; the bougainvillea had a large vote. The real flower that should have been selected to represent this city is the calistemon, which is equal in colouration and fairer in form. The Scotsman, for instance, takes the thistle. He is entitled to it.

There may be beauties in it to the Scotsman, but they are certainly hidden by the prickles round it. The rose is alleged to belong to England, but it belongs to anywhere from India to America, and it does just as well here as anywhere. The real symbol of Australia—virile, manly, not asking much from anybody but a fair deal—is the waratah.

I notice in this Bill that there is to be no discrimination, or at least little discrimination, between the real nature lover, who is merely taking flowers out of his turn, and the flower destroyer. Certainly there have been abuses in New South Wales through giving the quasi-scientist the right to destroy. They may be quasi-scientists on Thursday, but, once they are given a permit from Friday till Sunday, they are quite as bad as anyone else. Still, if any consideration is given in this Bill to the offender, it should be given to the gardener—the man who is taking plants to be grown—as compared with the man who is taking plants which will be thrown away at the first opportunity. . . .

I congratulate the Minister on the Bill, and I believe that the Government did a good thing in bringing it forward, as by this means we shall have a chance of maintaining and keeping the natural beauties of our land for our grandchildren, which, without this legislation, they would have no chance of seeing Australia as it was and still is.

Speech by Mrs. Longman.

Mrs. Irene Longman, member for Bulimba, also congratulated Mr. Walker on the Bill. He had, she said, anticipated the wishes of flower lovers and field naturalists throughout the State. It seems to me (added Mrs. Longman) that it is an adequate Bill, and it will result in keeping for us many of the wonderful floral beauties of Queensland. . . .

AUSTRALIAN FLORA UNIQUE.

I think we could all grow lyrical in describing the beauty of our flowers. Our flora is as significant as our fauna. We hear so much about the unique animals of Australia—the koala, the kangaroo, and the other marsupials; yet there are very few people who have realised in the past that the flora of Australia is also unique. The early explorers and visitors to the shores of Australia soon found that out, and it was no wonder that they looked upon it and spoke of it as being a new world. It was a new world to them—a world of new flowers, new trees, and new animals.

Mention was made by the hon. member for Warrego of the pictures painted by Mrs. Ellis Rowan, which are very beautiful, indeed. The hon. member mentioned that they were paintings of Western Australian flowers, and I should just like to point out to those who do not know that she painted just as many flowers belonging to Queensland as to Western Australia and the other States, and at present we have a great number of her works in our museum. Some of the early explorers and scientists who have been mentioned, such as Banks and Darwin, have written very extensively about many of our plants and flowers, which are still, fortunately for us, in existence, although we have had no protective legislation heretofore. In New South Wales the introduction of a somewhat similar measure resulted in the prevention of vandalism which was fast leading to the extinction of wild flowers in that State. We are taking time by the forelock in Queensland, and I feel that, when this Bill is in operation, we shall have gone very far along the lines which all flower lovers and scientists throughout the States have been hoping for. . . .

As a matter of fact, I think most types and most classes of people have had a hand in this plant destruction. We do want to preserve the beautiful flowers of which we have heard so much to-night—the boronias, the epacridaceæ, the many proteaceæ, among them the grevilleas, one of the most showy of which is the silky oak. We have also many beautiful orchids, both epiphytic and ground orchids, which should be safeguarded. The Minister has spoken of these, and there is no need for me to dwell upon them. There is a plant in the northern parts of Queensland which may be in danger, although there in such quantities, because we know that people have been tearing them out by the roots. I speak now of the Byfield fern, or Bowenia. This belongs to the Macrozamias, a family of long lineage, which are found in fossil form.

If this Bill results in the saving of these flowers and ferns and other forms of our flora throughout Queensland, it will have done a splendid thing. In New South Wales they have gone a little further than we are going in this Bill. I understand that they are prohibiting the gathering of certain wild flowers. I think the Minister has been wise in not doing that, for one of the most pleasing features of social life to-day throughout Australia is the fact that people have begun to appreciate the flowers of our bush.

This appreciation has become more general throughout Queensland of late years; and I think it would be a very great pity if the gathering of flowers was prevented. As a matter of fact, not only the country flower shows but also our National Show and the wildflower show that is held annually by the field naturalists provide centres of education not only for children but also for adults. People are beginning to realise that there is a way of picking these native flowers without destroying them, which in the past was not well recognised.

DRESSMAKING AND FANCY STITCHERY.

By MISS ELLIE CAMPBELL, Inspector of Domestic Arts, Education Department, South Australia.*

SUMMER is here, so thoughts turn to frocks and clothing. The wardrobes are turned out, and the contents looked over for renovations or replacings. In the planning and scheme of work, perhaps the following hints might be of some help to the woman who is distant from the costumiere or dressmaker, and has to depend on her own efforts. Unfortunately, all phases of home dressmaking could not be dealt with in one article, for it would become a volume, so just a few important points are selected.

Nowadays the designers and the commercial pattern companies have done much to assist in simplifying dressmaking for the housewife; thus with a little care and effort the clothing account can be considerably reduced. Several firms prepare and publish pattern for styles illustrated in their fashion books. There are two ways of procuring a commercial pattern; the most common way is to carefully look through a fashion book, and select the style of frock that is most becoming, then the pattern is ordered according to the bust measurement for a blouse, jumper, or frock, or to the hip measurement for a skirt. These patterns are drafted in proportion to the measurements of an average figure. The second way to procure a pattern is to send the measurements of the person to the firm, and indicate the style of garment that is required; they then draft the pattern—this is a surer way of obtaining a good fit.

A garment must fit the body well for the person to feel comfortable and at ease in it. If it fits well it will grace the line of the body, and will have a distinctive look. To send the measurements to the designers, it is well to know just where and how to take the measures, also they are very handy in order to check the size of a "commercial" pattern. The person should stand naturally, and the arms should not be raised nor the head lowered whilst the measures are being taken. The diagrams following will show where to take the various measures.

The neck measure should be taken comfortably, not too loosely nor too firmly.

The shoulder measurement is taken from where the neck joins the shoulder to the top of the arm joint.

The cross chest should be taken firmly across the chest, above the bust line, just where the arms join the body. The bust measurement is taken right around the body under the arms, passing over the shoulder blades and across the fullest part of the bust. It should be a loose measurement, to allow for expansion of the chest and for free movement. The waist measurement should be firmly taken around the body a little below the ribs. This is not always the waist line of the frocks—that is obtained when designing the gown.

The underarm is taken down the side from the armpit to the waist line.

The cross back is taken above the bust measurement, where the arms join the body.

The hip measurement is taken loosely, 7 in. below the waist. This measurement has to allow for the spring of the legs and body.

The down front measurement is taken from the point where the neck joins the shoulder, over the bust, down centre front to the ground. The height of the edge of hem above the ground is to be deducted to give the correct down front length of frock. The down back is taken from the bone at the nape of the neck to the ground, and the height of hem above ground deducted as for front measurement.

The sleeve measurement is taken with the arm bent, the hand resting on the chest. Measure from top of shoulder joint, around point of elbow to the wrist bone. This allows for the bend of the arm.

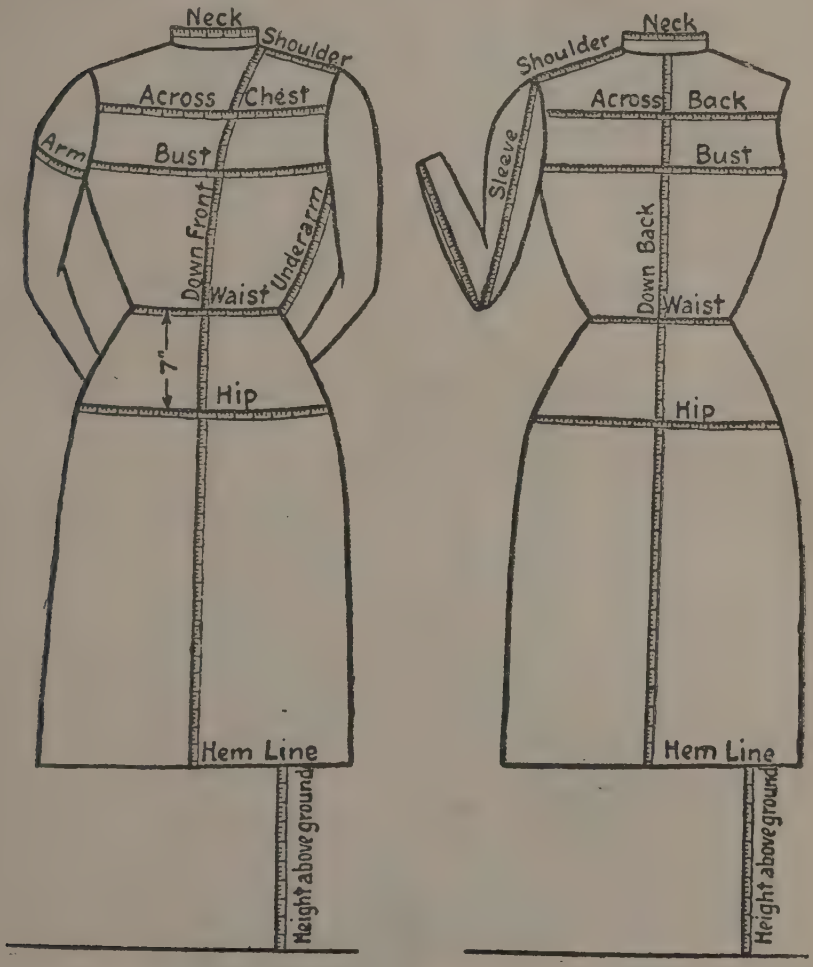
Wrist, measure around the broadest part of the hand, keeping the thumb in the palm of hand.

It is most important that these measurements be taken very accurately, as the whole fit of garment will depend on them, also the amount of material to be used will be governed by the pattern. With these measurements the commercial patterns can be tested and adjusted.

In order that the pattern may be pieced together properly, various methods have been devised to indicate the pieces to be joined; it is necessary to understand and read the patterns. One method is the use of lines, arrows, and wording. The broad dark line is the cutting line; the fine broken line is the seam line; the double arrow indicates the way of the grain of the material—that is the way of the threads, not the pattern of the material; thus it can be a crossway grain or a lengthwise grain, the way of the selvedge, the darkened notches are numbered and they correspond.

* In the Journal of the Department of Agriculture, South Australia.

Another method is the use of perforations. Large punctures in pairs, in a line, are used to indicate the way of the grain, smaller punctures marking the seam line; yet smaller punctures to indicate tucks, gathers, or pleats. The edge of the paper pattern is the cutting line. Folds are indicated by three punctures forming a triangle. It is most essential that the pattern should be placed on the grain of material correctly, as this affects the hang of the garment.



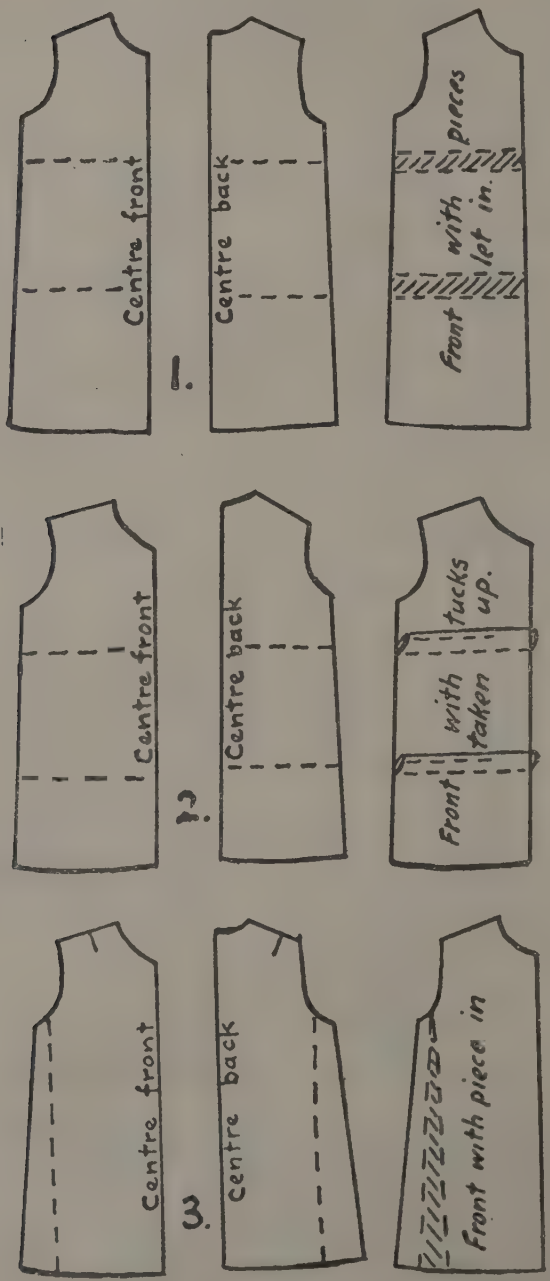
FRONT BACK.

Having read and tested the pattern, some slight alteration might be necessary to give good fit. Following are a few suggestions for keeping the line and design, although altering the measurements:—

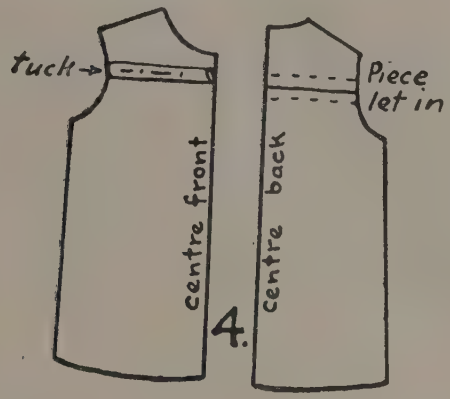
1. To lengthen pattern 3 in. or 4 in.—Cut across the front pattern 2 in. above waistline, and spread pattern 1½ in. or 2 in. Cut across the front pattern below hip-line and let in the necessary 1½ in. or 2 in. This will give the extra length.

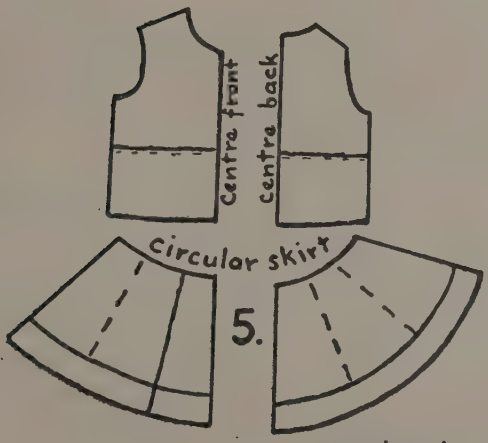
Cut the back pattern to correspond.

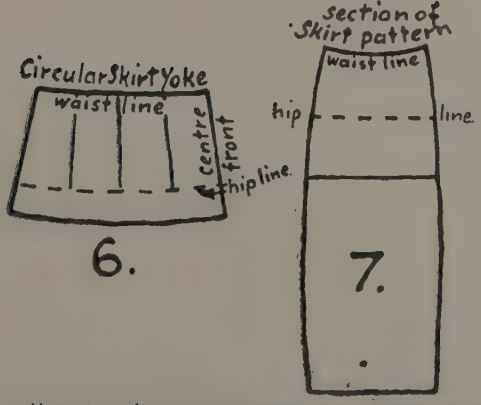
2. To shorten pattern 4 in., place an inch tuck across the pattern between the waist and bust lines, also another inch tuck below the hip-line.



3. To widen a pattern that is tight at the hips, cut pattern from a point 2 in. in from corner of armhole down to hemline, and spread the necessary amount; fasten to new paper. This will give extra width for hips and spring of legs when walking.







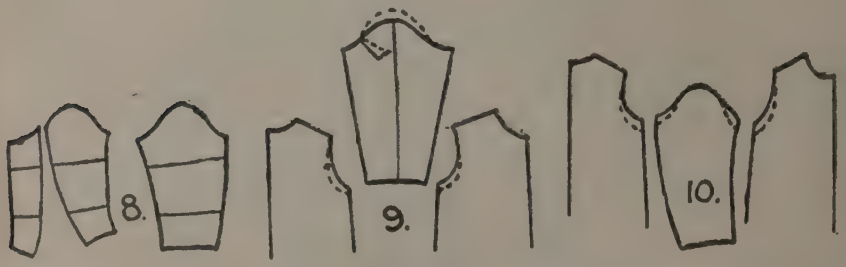
4. To alter pattern to suit a round back and flat chest—Cut pattern along line of cross back measurement and spread it the necessary amount. Put a tuck in the front on cross chestline, taking up the same amount as was let into back. Add same amount to lower edge of front to adjust the hemline.

5. To shorten a pattern with a circular skirt—Place small tuck in bodice, between waist and bust lines. Cut skirt pattern in more than one place, being careful to have even distance top and hem. Spread to allow the new hemline to have same measurement, and cut off extra length, being sure to keep the circular cut.

6. To make a circular yoke pattern larger at the hips—Cut the pattern in three places, from the waistline to the hipline, and spread the necessary amount.

   To shorten the waistline of circular yoke—Place three tucks in yoke, at equal distances, taking up the extra length between them; taper the tucks from waist to hipline.

7. To adjust length of skirt pattern, that has two or more pieces—Make tucks, or let in extra length, 6 in. below hipline.



8. To lengthen or shorten sleeve pattern, make the adjustments above and below the elbowline, by either letting in the extra length, or taking up the extra amount in tucks.

9. To make a fuller sleeve, cut from top of curve to middle of cuff, and spread pattern to arm measurement, adjust curve by equal amount that is taken up in pleats in pattern. Adjust armholes equal amount.

10. To make deeper armhole, an equal amount must be cut from back and front of bodice pattern, also both sides of sleeve curve. Be careful to deepen both sides.

When the pattern is adjusted to the required measurements, it is advisable to place the whole pattern on the material, before starting to cut out. Often an appreciable amount of material can be saved with careful placing; take time to think it out, then thoroughly look over the placement. Do not be in too great a hurry to cut, as a wrong cut often wastes material. To prove the pattern, before cutting out in expensive cloth, make the garment up for a housefrock in a cheap material, such as zephyr or cambric. This will often give confidence and assurance that the better garment will give satisfaction.

Careful and neat finishings are advisable, as the seams and hems are strengthened. There are two kinds of seams: the French or double seam, and a flat seam. In this seam it is necessary to neaten the edges of the material to prevent fraying; this can be done by either overcasting the edge, and keeping it flat, turning the raw edge in and machining down, or by nicking along the edge of material (this is known as pinking the edge).

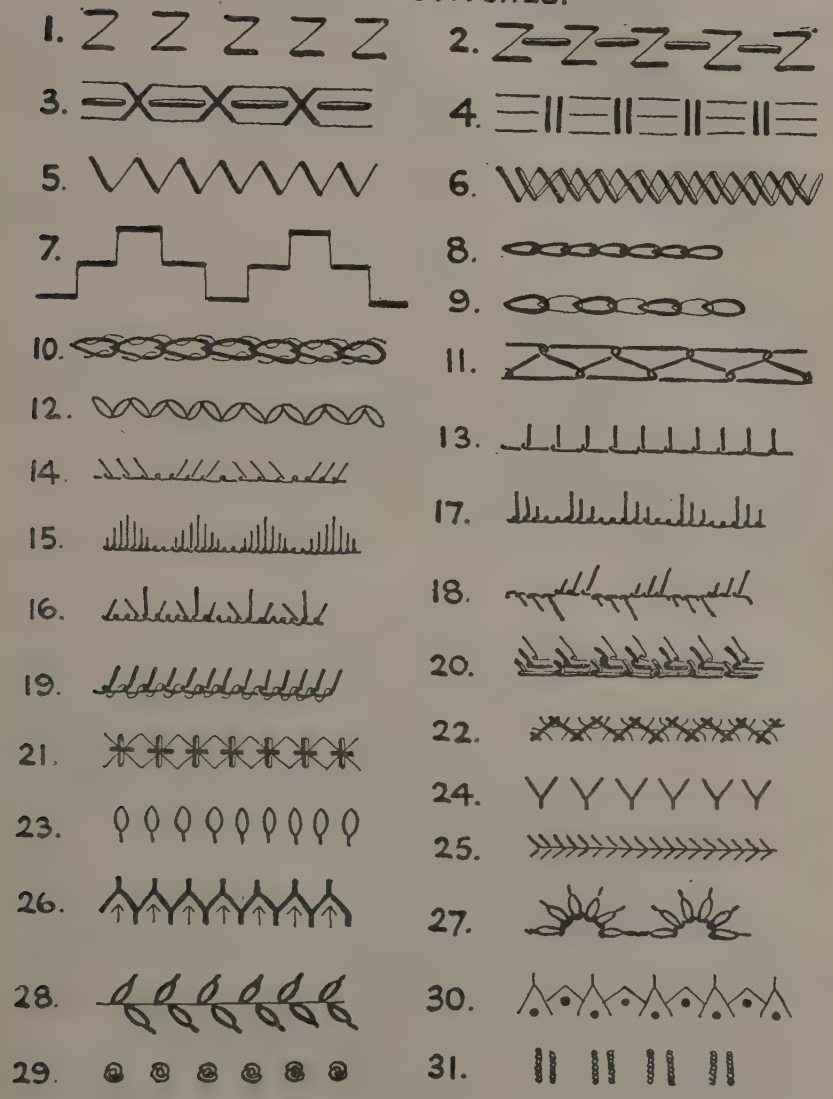
The neck, and sometimes the hem, can be bound by a bias bind—here the bind must be on the true cross, or bias, for it to sit correctly. Necks and cuffs can be faced and piped; the facing should be cut similar to the part to be faced. Hems can be slip-stitched, or if light material, hemstitched. Buttonholes can be worked or bound, and they should be carefully finished off.

The finishing leads to longer wear and service of the garment. The appearance of the garment, especially in children's clothes, is often improved by a little simple stitchery around the collar, cuffs, and hem.

A few well-known and selected stitches that can be used for this purpose are here illustrated and explained:—

EDUCATION DEPARTMENT, S.A.—DOMESTIC ARTS.

FANCY STITCHES.



REFERENCE—

□ = 1 colour. ▭ = 2 colours ▭ = 3 colours ▭ = 4 colours

Key to Stitches.

1. *The "Z" stitch*, large running stitch joined by hemming stitch.
2. *The "Z" stitch* linked by a row of tacking.
3. *"Link" stitch*, two rows of tacking joined by a "Cross" stitch, and linked with another row of tacking.

4. *"Post and Rail" stitch,* three rows of running, with two upright tacking stitches.
5. *The "V" stitch,* hemming two ways.
6. *The "Diamond" stitch,* two rows of "V" stitch overlapping.
7. *The "Step" stitch,* horizontal and upright darning.
8. *The single chain stitch.*
9. *"Magic" chain,* the chain stitch worked in two colours.
10. *"Laced" chain,* the single chain stitch, laced with a different colour.
11. *"Double" chain,* the chain stitch worked openly.
12. *"Zig Zag" chain,* the chain stitch worked on the slant.
13. *"Blanket" stitch.*
14, 15, 16, 17, 18. Variations of *"Blanket" stitch,* suitable for hems.
19. *"Laced" blanket,* simple lacing into "Blanket" stitch.
20. *"Battlement" stitch,* three rows of "Blanket" stitch done on the slant.
21. *"Star" stitch,* cross stitch, running through the cross and upright tacking.
22. *Laced Herringbone stitch.*
23. *Lazy-daisy stitch.*
24. *"Y" stitch,* open lazy-daisy stitch.
25. *"Feathery" stitch,* the lazy-daisy stitch worked closely together.
26. *"Gable" stitch,* two rows of arrow stitch with a tacking stitch.
27. *"Sun" stitch,* lazy-daisy stitch worked in half-circles.
28. *"Leaf" stitch,* lazy-daisy stitch and a darning stitch
29. *French knots.*
30. *"Tent" stitch,* lazy-daisy hemming, and French knots.
31. *Bullion stitch.*

THOROUGH CULTIVATION ESSENTIAL.

All farming experts are unanimous on the need for frequent and effective cultivation for growing crops and stress also the advisability of originally ploughing to a sufficient depth to suit the crops which are used. Crops like maize, sugar-cane, &c., need a much greater depth of cultivated soil than does wheat, for instance, and the best results are obtained only through ploughing to the right depth and then when crops are growing, and by special care that cultivation is carried out at intervals of sufficient frequency to prevent loss of evaporation through the soil.

Because of this necessity for proper ploughing and cultivation, all farmers and orchardists should make a special point of keeping in touch with latest developments in agricultural machinery. The principle of rotary tillage has for a number of years engaged quite a lot of attention not only in Australia but in the United States as well, but in our country much greater strides have been made in the production of a really efficient rotary cultivator for use in conjunction with ordinary farm tractors.

One of the main developments has been that of the Howard Rotary Hoe, which, for those who have purchased them, have proved entirely satisfactory.

A rotary hoe fitted to a tractor is capable of carrying out the whole of the ploughing and cultivating required on any property. The heavy breaking up is done by means of pick tynes, and with a given power of tractor will do a greater width of cut to a greater depth than is the case with any other implement available. This greater work is accounted for by the principle under which the rotary hoe works. The power for driving it is taken direct from the power taken off on the tractor, then though spiral bevel gearing running in oil. There is, therefore, practically no loss and absolutely no drag as is the case with ordinary disc implements. The rotary hoe turns every horse-power into effective cultivation and gives the best results for the horse power and consequently the fuel which is used. For the Howard Rotary Hoe, Buzacott's (Queensland) Limited, of Adelaide street, Brisbane, are the agents, and any inquiry to them will meet with an immediate response.

Orchard Notes for March.

THE COASTAL DISTRICTS.

If the weather is favourable, all orchards, plantations, and vineyards should be cleaned up, and the ground brought into a good state of tilth so as to enable it to retain the necessary moisture for the proper development of trees or plants. As the wet season is frequently followed by dry autumn weather, this attention is important.

Banana plantations must be kept free from weeds, and suckering must be rigorously carried out, as there is no greater cause of injury to a banana plantation than neglect to cultivate. Good strong suckers will give good bunches of good fruit, whereas a lot of weedy overcrowded suckers will only give small bunches of undersized fruit that is hard to dispose of, even at a low price.

Cooler weather may tend to improve the carrying qualities of the fruit, but care must still be taken to see that it is not allowed to become over-developed before it is packed, otherwise it may arrive at its destination in an over-ripe and consequently unsaleable condition. The greatest care should be taken in grading and packing fruit. Only one size of fruit of even quality must be packed. Smaller or inferior fruit must never be packed with good large fruit, but must always be packed separately as required by regulation.

The marketing of the main crop of pineapples, both for canning and the fresh fruit trade, will be completed in the course of the month, and as soon as the fruit is disposed of plantations which are apt to become somewhat dirty during the gathering of the crop must be cleaned up. All weeds must be destroyed, and if blady grass has got hold anywhere it must be eradicated, even though a number of pineapple plants have to be sacrificed, for once a plantation becomes infested with this weed it takes possession and soon kills the crop. In addition to destroying all weed growth, the land should be well worked and brought into a state of thorough tilth.

In the Central and Northern districts, early varieties of the main crop of citrus fruits will ripen towards the end of the month. They will not be fully coloured, but they can be marketed as soon as they have developed sufficient sugar to be palatable; they should not be gathered whilst still sour and green. Citrus fruits of all kinds require the most careful handling, as a bruised fruit is a spoilt fruit, and is very liable to speck or rot. The fungus that causes specking cannot injure any fruit unless the skin is first injured. Fruit with perfect skin will eventually shrivel, but will not speck. Specking or blue mould can therefore be guarded against by the exercise of great care in handling and packing. At the same time, some fruit is always liable to become injured, either by mechanical means, such as thorn pricks, wind action, hail, punctures by sucking insects, fruit flies, the spotted peach moth, or gnawing insects injuring the skin. Any one of these injuries makes it easy for the spores of the fungus to enter the fruit and germinate. All such fruit must therefore be gathered and destroyed, and so minimise the risk of infection. When specked fruit is allowed to lie about in the orchard or to hang on the trees, or when it is left in the packing sheds, it is a constant source of danger, as millions of spores are produced by it. These spores are carried by the wind in every direction, and are ready to establish themselves whenever they come in contact with any fruit into which they can penetrate. Specking is accountable for a large percentage of loss frequently experienced in sending citrus fruits to the Southern States, especially early in the season, and as it can be largely prevented by the exercise of necessary care and attention, growers are urged not to neglect these important measures.

Fruit must be carefully graded for size and colour, and only one size of fruit of one quality should be packed in one case. The flat bushel-case (long packer) commonly used for citrus fruits does not lend itself to up-to-date methods of grading and packing, and we have yet to find a better case than the American orange case. Failing this case, a bushel-case suggested by the New South Wales Department of Agriculture is the most suitable for citrus fruits, and were it adopted it would be a simple matter to standardise the grades of our citrus fruit, as has been done in respect to apples packed in the standard bushel-case used generally for apples throughout the Commonwealth. The inside measurements of the case suggested are 18 in. long, 11¾ in. wide, and 10½ in. deep. This case has a capacity of 2,200 cubic inches, but is not included in the schedule of the regulations under "*The Fruit Cases Acts*, 1912-1922." The half-bushel case, No. 6 of the Schedule above referred to, is 10 in. by 11¾ in. by 5¼ in. inside measurements with a capacity of 1,100 cubic inches. The case should be suitable for oranges and the half-case for mandarins. No matter which case is used, the fruit must be sweated for seven days before it is sent to the

Southern markets, in order to determine what fruit has been attacked by fruit fly, and also to enable bruised or injured fruit liable to speck to be removed prior to despatch.

Fruit fly must be systematically fought in all orchards, for if this important work is neglected there is always a very great risk of this pest causing serious loss to citrus growers.

The spotted peach moth frequently causes serious loss, especially in the case of navels. It can be treated in a similar manner to the codlin moth of pip fruit, by spraying with arsenate of lead, but an even better remedy is not to grow any corn or other crop that harbours this pest in or near the orchard. Large sucking-moths also damage the ripening fruit. They are easily attracted by very ripe bananas or by a water-melon cut in pieces, and can be caught or destroyed by a flare or torch when feeding on these trap fruits. If this method of destruction is followed up for a few nights, the moth will soon be thinned out.

Strawberry planting can be continued during the month, and the advice given in last month's notes still holds good. Remember that no crop gives a better return for extra care and attention in the preparation of the land and for generous manuring than the strawberry.

THE GRANITE BELT, SOUTHERN AND CENTRAL TABLELANDS.

The advice given in these notes for the last few months regarding the handling, grading, and packing of fruit should still be carefully followed. The latter varieties of apples and other fruits are much better keepers than earlier-ripening sorts, and as they can be sent to comparatively distant markets, the necessity for very careful grading and packing is, if anything, greater than it is in the case of fruit sent to nearby markets for immediate consumption. Instruction in the most up-to-date methods of grading and packing fruit has been published by the Department, which advice and instruction should enable the growers in that district to market their produce in a much more attractive form.

The same care is necessary in the packing of grapes, and it is pleasing to note that some growers are packing their fruit very well. Those who are not so expert cannot do better than follow the methods of the most successful packers.

As soon as the crop of fruit has been disposed of, the orchard should be cleaned up, and the land worked. If this is done, many of the fruit-fly pupæ that are in the soil will be exposed to destruction in large numbers by birds, or by ants and other insects. If the ground is not worked and is covered with weed growth, there is little chance of the pupæ being destroyed.

Where citrus trees show signs of requiring water, they should be given an irrigation during the month, but if the fruit is well developed and approaching the ripening stage, it is not advisable to do more than keep the ground in a thorough state of tilth, unless the trees are suffering badly, as too much water is apt to produce a large, puffy fruit of poor quality and a bad shipper. A light irrigation is therefore all that is necessary in this case, especially if the orchard has been given the attention recommended in these notes from month to month.

CONCRETE ON THE FARM.

Many inquiries have been received from time to time in regard to the correct mixture to use in the preparation of concrete for pig feeding troughs and floors, for it has been found that for floors of dairies, piggeries, and other places where milk is used, the ordinary mixtures of concrete are damaged by the action of lactic and other acids.

From an economic and practical point of view, concrete is satisfactory, but it must be composed of a finely grained hard aggregate and be laid down under the best of conditions to be permanent. Both brick and a coarse broken stone composition of concrete are unsuitable where impermeability and resistance to acids are essential.

A rich dense mortar composed of sand and cement only, in the proportion of not more than three of sand to one of cement, with a hardener resistant to lactic acid and abrasive action added, is required for rendering (or topdressing).

To overcome the effects of the lactic acid in eating into the concrete and causing a very rough surface, it is recommended that when the mixture is being prepared either one or other of the following hardeners be incorporated in quantities advised by manufacturers of these products, viz.:—Toxement, No. 421, Pudlo, Calemanoid, or Novoid. Merchants handling sand, gravel, and general hardware would readily advise regarding their use. These hardeners also prolong the life of the cement.

Farm Notes for March.

Land on which it is intended to plant winter cereals should be in a forward stage of preparation. Sowings of lucerne may be made at the latter end of the month on land which is free from weed growth and has been previously well prepared.

The March-April planting season has much in its favour, not the least of which is that weeds will not make such vigorous growth during the succeeding few months, and, as a consequence, the young lucerne plants will have an excellent opportunity of becoming well established.

Potato crops should be showing above ground, and should be well cultivated to keep the surface soil in good condition; also to destroy any weed growth.

In districts where blight has previously existed, or where there is the slightest possible chance of its appearing, preventive methods should be adopted—i.e., spraying with "Burgundy mixture"—when the plants are a few inches high and have formed the leaves; to be followed by a second, and, if necessary, a third spraying before the flowering stage is reached.

Maize crops which have fully ripened should be picked as soon as possible and the ears stored in well-ventilated corn cribs, or barns. Selected grain which is intended for future seed supplies should be well fumigated for twenty-four hours and subsequently aerated and stored in airtight containers. Weevils are usually very prevalent in the field at this time of the year and do considerable damage to the grain when in the husk.

The following crops for pig feed may be sown:—Mangel, sugar beet, turnips and swedes, rape, field cabbage, and carrots. Owing to the small nature of the seeds, the land should be worked up to a fine tilth before planting, and should contain ample moisture in the surface soil to ensure a good germination. Particular attention should be paid to all weed growth during the early stages of growth of the young plants.

As regular supplies of succulent fodder are essentials of success in dairying operations, consideration should be given to a definite cropping system throughout the autumn and winter, and to the preparation and manuring of the land well in advance of the periods allotted for the successive sowings of seed.

The early planted cotton crops should be now ready for picking. This should not be done while there is any moisture on the bolls, either from showers or dew. Packed cotton showing any trace of dampness should be exposed to the sun for a few hours on tarpaulins, bags, or hessian sheets, before storage in bulk or bagging or baling for ginning. Sowings of prairie grass and *phalaris bulbosa* (Toowoomba canary grass) may be made this month. Both are excellent winter grasses. Prairie grass does particularly well on scrub soil.

Dairymen who have maize crops which were too far advanced to benefit by the recent rains, and which show no promise of returning satisfactory yields of grain, would be well advised to convert these into ensilage to be used for winter feed. This, especially when fed in conjunction with lucerne or cowpea, is a valuable fodder. Where crops of Soudan grass, sorghum, white panicum, Japanese millet, and liberty millet have reached a suitable stage for converting into ensilage, it will be found that this method of conserving them has much to recommend it. Stacking with a framework of poles, and well weighting the fodder, is necessary for best results. All stacks should be protected from rain by topping off with a good covering of bush hay built to a full cave and held in position by means of weighted wires.

BERKSHIRE FARMER'S RUSE.

A humorous story was told recently to Essex surveyors by Mr. Benaiah W. Adkin, Principal of the College of Estate Management. Referring to his early experiences as an articled pupil with a firm of agricultural auctioneers and land agents in Berkshire, Mr. Adkin recounted the yarn of a Berkshire farmer who was notorious for always getting the best of any bargain with a butcher. He kept a good cellar and always entertained the butchers most royally before broaching the question of business. When the time came to inspect the beasts he always refused to leave his sitting-room himself on account of gout, and pointed out the beasts to the butcher through the sitting-room window. The explanation of his successful bargaining was discovered when he died, when it was found that the sitting-room window was glazed with glass of a very high magnification.

ASTRONOMICAL DATA FOR QUEENSLAND.

TIMES COMPUTED BY D. EGLINTON, F.R.A.S., AND A. C. EGLINTON.

TIMES OF SUNRISE, SUNSET, AND MOONRISE.

AT WARWICK.

	February, 1931.		March, 1931.		MOONRISE. Feb. 1931.	Mar. 1931.
Date.	Rises.	Sets.	Rises.	Sets.	Rises.	Rises.
					p.m.	p.m.
1	5.26	6.44	5.48	6.22	5.30	4.2
2	5.27	6.44	5.48	6.21	6.28	5.3
3	5.28	6.43	5.49	6.19	7.15	5.47
4	5.29	6.42	5.50	6.18	7.55	6.24
5	5.30	6.41	5.51	6.17	8.32	7.0
6	5.31	6.40	5.51	6.16	9.7	7.35
7	5.32	6.40	5.52	6.15	9.41	8.11
8	5.33	6.39	5.53	6.14	10.16	8.48
9	5.33	6.38	5.53	6.13	10.52	9.29
10	5.34	6.37	5.54	6.11	11.35	10.16
11	5.34	6.37	5.54	6.10	...	11.8
					a.m.	
12	3.35	6.36	5.55	6.9	12.22	...
						a.m.
13	5.36	6.35	5.56	6.8	1.15	12.3
14	5.36	6.35	5.56	6.7	2.10	1.0
15	5.37	6.34	5.56	6.6	3.5	1.54
16	5.38	6.34	5.57	6.5	4.1	2.50
17	5.38	6.33	5.57	6 4	4.57	3.46
18	5.39	6.32	5.58	6 3	5.52	4.40
19	5.40	6.32	5 58	6.2	6.45	5.32
20	5.41	6.31	5 59	6.1	7.37	6.23
21	5.42	6.30	5.59	5.59	8.27	7.15
22	5.43	6.29	6.0	5.58	9.18	8.8
23	5.43	6.28	6.0	5.57	10.15	9.2
24	5.44	6.27	6.1	5.56	11.11	10.3
					p.m.	
25	5.45	6.26	6.1	5.55	12.10	11.2
						p.m.
26	5.46	6.25	6.2	5.54	1.10	12.1
27	5.46	6.24	6.2	5 53	2.10	1.0
28	5.47	6.28	6.3	5.52	3.11	1.58
29	...	...	6.4	5.51	...	2.52
30	...	...	6.4	5.50	...	3.38
31	...	...	6.5	5 49	...	4.17

For places west of Warwick and nearly in the same latitude, 28 degrees 12 minutes S., add 4 minutes for each degree of longitude. For example, at Inglewood, add 4 minutes to the times given above for Warwick; at Goondiwindi, add 8 minutes; at St. George, 14 minutes; at Cunnamulla, 25 minutes; at Thargomindah, 33 minutes; and at Oontoo, 43 minutes.

The moonlight nights for each month can best be ascertained by noticing the dates when the moon will be in the first quarter and when full. In the latter case the moon will rise somewhat about the time the sun sets, and the moonlight then extends all through the night; when at the first quarter the moon rises somewhat about six hours before the sun sets, and it is moonlight only till about midnight. After full moon it will be later each evening before it rises, and when in the last quarter it will not generally rise till after midnight.

It must be remembered that the times referred to are only roughly approximate, as the relative positions of the sun and moon vary considerably.

[All the particulars on this page were computed for this Journal, and should not be reproduced without acknowledgment.]

Phases of the Moon, Occultations, &c.

3 Feb.	○ Full Moon	10	26 a.m.
10 „	☽ Last Quarter	2	10 a.m.
17 „	● New Moon	11	11 p.m.
26 „	☾ First Quarter	2	42 a.m.

Perigee, 4th February, at 8.24 a.m.
Apogee, 19th February, at 7.42 a.m.

Possessors of telescopes or binoculars will find it interesting to look for Jupiter near the Moon about 4 or 5 o'clock in the afternoon of the 28th. Jupiter will then be on the southern side of the Moon, at a distance nearly as great as the length of the Southern Cross.

Conjunctions of the Moon with the other planets during this month will occur when they are below the horizon in Queensland.

Mercury will rise at 3.34 a.m. on the 1st and at 3.59 a.m. on the 14th.

Venus will rise at 2.4 a.m. on the 1st and at 2.9 a.m. on the 14th.

Mars will rise at 6.37 p.m. on the 1st and at 5.28 p.m. on the 14th.

Jupiter will rise at 4.56 p.m. on the 1st and at 3.59 p.m. on the 14th.

Saturn will rise at 3.37 a.m. on the 1st and at 2.52 a.m. on the 14th.

The Southern Cross in the early part of February will be at position VIII. about 8 o'clock in the evening. Coming into view in the south-east in a slanting position with its head a good deal inclined downwards.

4 Mar.	○ Full Moon	8	36 p.m.
11 „	☽ Last Quarter	3	15 p.m.
19 „	● New Moon	5	50 p.m.
27 „	☾ First Quarter	3	4 p.m.

Perigee, 4th March, at 8.42 p.m.
Apogee, 18th March, at 8.48 a.m.

About an hour after sunset on the 1st March it will be interesting to notice that Mars which was in opposition to the Sun on 27th January, will be only about one degree south of the Moon. They will be in the constellation Cancer, with Castor and Pollux to the north-west, the Moon having passed through Gemini a few days earlier.

An occultation of Antares, the principal star of Scorpio, will occur on the 10th instant some time before the Moon rises, about 10.16 p.m. at Warwick and about 11.3 at Hughenden. At these times it will be noticeable that the Moon will be two and three degrees eastward of Antares.

The Moon will pass Saturn on the night of the 13th at a distance equal to the length of the Southern Cross to the northward of the planet.

On the 15th, when on the far side of its orbit and about 130 million miles from the Earth, Mercury will be almost behind the Sun.

The conjunction of Mercury with the New Moon on the 19th will, of course, be invisible.

As the time of our autumnal Equinox will be midnight of the 21st, it will be equally correct to say that the Equinox will be on the 21st or 22nd.